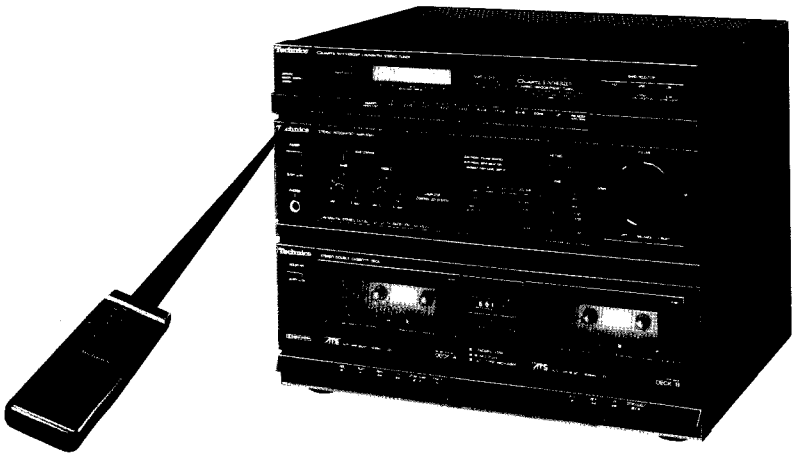
ORDER NO. HAD8704073C8

Service Manual

Cassette Receiver

SA-X800L



Color

(K)...Black Type

Color	Areas
(K)	[E, E5]...Continental Europe.
(K)	[EB].....Belgium.
(K)	[EF].....France.
(K)	[EK].....United Kingdom.
(K)	[EH].....Holland.
(K)	[XL].....Australia.

DOLBY SYSTEM

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"Dolby" and the double-D symbol are trade marks of Dolby Laboratories Licensing Corporation.

SPECIFICATIONS

(DIN 45 500)

■ AMPLIFIER SECTION

40Hz~16kHz continuous power output	
both channels driven	2×18W (THD 1%, 8Ω)
1kHz continuous power output	
both channels driven	2×20W (THD 1%, 8Ω)
Total harmonic distortion	
half power at 1kHz	0.05% (8Ω)
Power bandwidth	
both channels driven, −3dB	15Hz~40kHz (8Ω)
Damping factor	22 (8Ω)
Input sensitivity and impedance	
PHONO	3.0mV/47kΩ
CD	250mV/20kΩ
Frequency response	
PHONO	RIAA standard curve ±0.8dB (30Hz~15kHz)
CD	18Hz~50kHz (−3dB)
Tone controls BASS	50Hz, +10dB~−10dB
TREBLE	12.5kHz, +10dB~−10dB
Load impedance	8Ω~16Ω

■ FM TUNER SECTION

Frequency range	87.50~108.00MHz (0.05MHz step)
Sensitivity	14.7dBf, (1.5μV, IHF' 58)
S/N 26dB	1.2μV (40kHz mod., 75Ω)
Total harmonic distortion	
1kHz MONO	0.15%
STEREO	0.3%
S/N MONO	70dB (78dB, IHF)
STEREO	65dB (71dB, IHF)
Frequency response	20Hz~15kHz, +0.5dB~−1.5dB
Image rejection at 98MHz	40dB
Stereo separation 1kHz	40dB
10kHz	30dB
Antenna terminals	75Ω (unbalanced)

■ AM TUNER SECTION

Frequency range		
MW		522~1611kHz (9kHz steps)
		530~1620kHz (10kHz steps)
LW		155~353kHz (9kHz step)
		153~351kHz (−2kHz shift)
Sensitivity (S/N 20dB)		
MW		20μV, 300μV/m (999kHz)
LW		40μV (254kHz)
Selectivity	**MW**	55dB (999kHz)
	LW	55dB (254kHz)
Image rejection	**MW**	40dB (999kHz)
	LW	50dB (254kHz)

■ CASSETTE DECK SECTION

Deck system	Auto stop double cassette system
Track system	4-track, 2-channel
Heads	
PLAY	Solid permaloy head
REC/PLAY	Solid permaloy head
Erasing	Double-gap ferrite head
Motor	DC servo motor

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

Recording system	AC bias, 100kHz
Erasing system	AC erase, 100kHz
Tape speed	4.8cm/sec. (1-7/8 ips)
Frequency response	
CrO_2	30Hz~16kHz (DIN)
	40Hz~15kHz, +3dB, −6dB
NORMAL	30Hz~15kHz (DIN)
	40Hz~14kHz, +3dB, −6dB
S/N (CrO_2 type tape)	
DOLBY NR in	66dB (CCIR)
DOLBY NR out	56dB (A-WTD)
Wow and flutter	0.2% (WRMS)
Fast Forward and Rewind Time	
Approx. 150 seconds with C-60 cassette tape	

■ GENERAL

Power consumption	130W
Power supply	
For continental Europe	AC 50Hz/60Hz, 220V
For Australia	AC 50Hz/60Hz, 240V
For others	
	AC 50Hz/60Hz, 110V/127V/220V/240V
Dimensions	360×292×303mm
	(14-3/16″×11-1/2″×11-15/16″)
Weight	6.2kg (13.7 lb)

Note:

Specifications are subject to change without notice.
Weight and dimensions are approximate.

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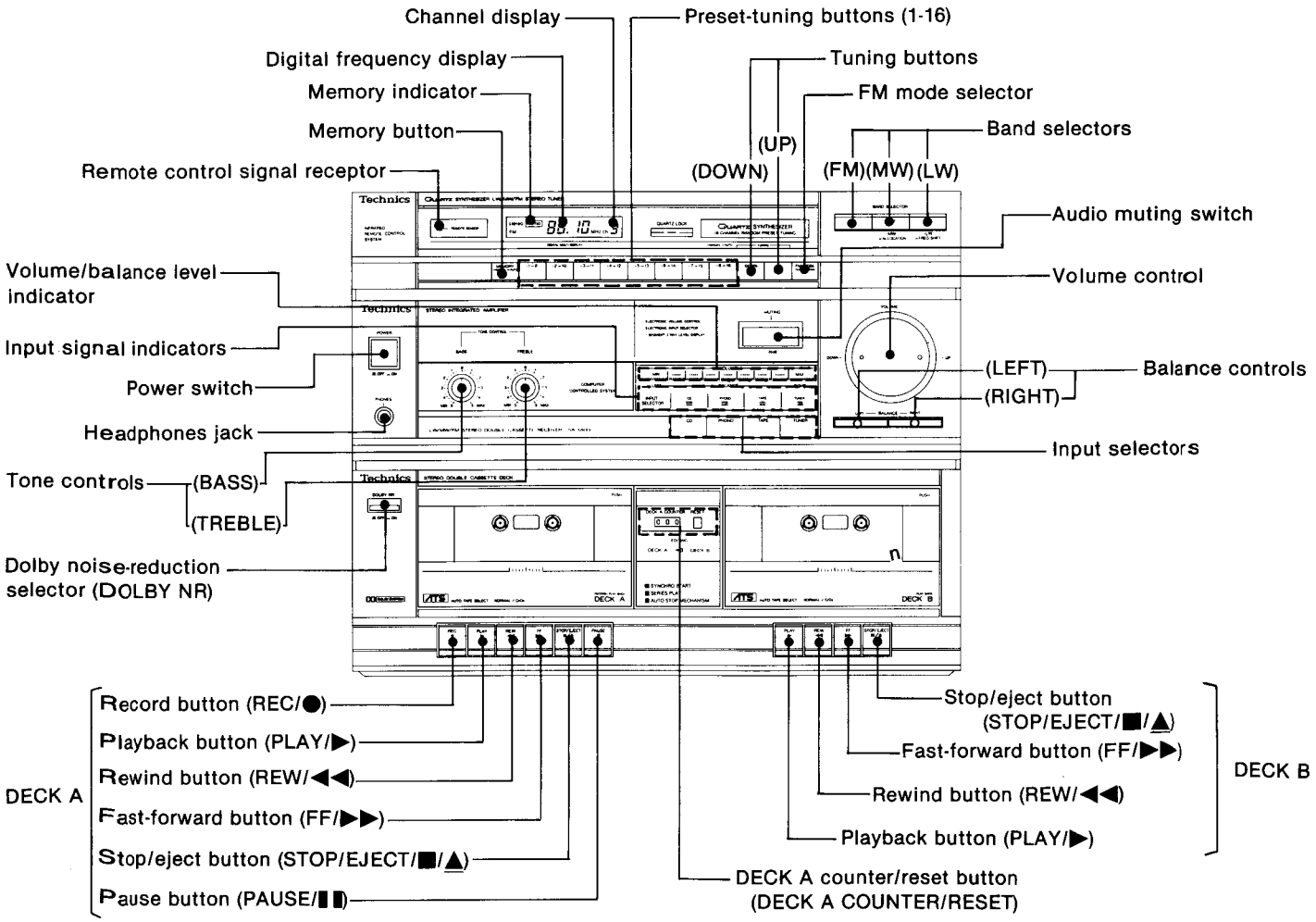
■ LOCATION OF CONTROLS

• **Front Panel**



D

ORDER NO. HAD8704073C8-A

LW/MW/FM STEREO
DOUBLE CASSETTE RECEIVER

DEUTSCH

Verwenden Sie bitte diese Broschüre Zusammen mit der Service-Anieitung für das Modell Nr. SA-X800L.

■ MESSUNGEN UND JUSTIERUNGEN

• LW/MW/FM

Einstellungen der Bedienelemente und zu verwendende Geräte.

- MW/UKW-Meßsender (MW/UKW-MS)
- Stereo-Modulator
- Verzerrungs-Analystator
- Oszilloskop
- Elektronische Wechselstrom- und Gleichstrom-Voltmeter (EVM).
- Frequenzzähler
- Drosselspule (100μH)
- Widerstand (100kΩ)
- Keramischer Kondensator (200pF)

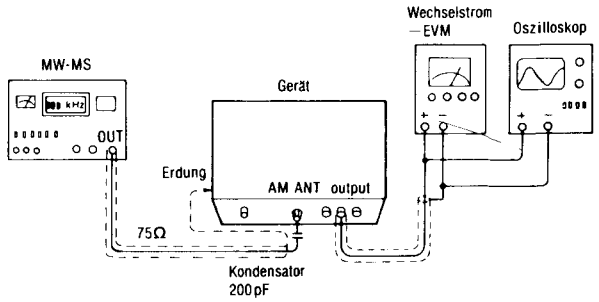
Anmerkung: Für **T202 (MW-ZFT), L210 (MW-OSZ,-Spule)** und **L211 (LW-OSZ,-Spule),** werdeven justiert Ersatzteil geliefert.
Dien Kern dieses Teils daher nicht drehen.

MW-HF-JUSTIERUNG

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Das Gerät auf "**MW**" einstellen.
3. Radio und Signalgenerator auf **612kHz** einstellen.
4. **L208** auf maximale Ausgangsleistung abgleichen.
5. Radio und Signalgenerator auf **1503kHz** einstellen.
6. **CT202** auf maximale Ausgangsleistung abgleichen.
7. Die Schritte 3.~6. wiederholen.

Anmerkung:
Der Antenneneingang-Signalpegel muß so niedrig wie möglich und frei von automatischer Verstärkungsregelung (AGC) sein.

ZUSTAND DES MW-MESSENDERS
Modulation.....30%
Modulationsfrequenz.....400Hz

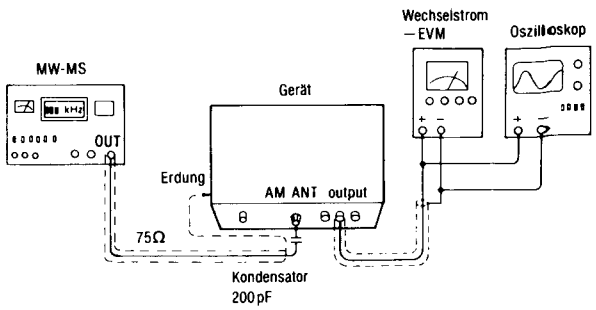


LW-HF-JUSTIERUNG

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Das Gerät auf "**LW**" einstellen.
3. Die Radiofrequenzanzeige und den Meßsender auf **155kHz** einstellen.
4. **L209** auf maximale Ausgangsleistung abgleichen.
5. Die Radiofrequenzanzeige und den Meßsender auf **353kHz** einstellen.
6. **CT203** auf maximale Ausgangsleistung abgleichen.
7. Die Schritte 3.~6. wiederholen.

Anmerkung:
Der Antenneneingang-Signalpegel muß so niedrig wie möglich und frei von automatischer Verstärkungsregelung (AGC) sein.

ZUSTAND DES MW-MESSENDERS
Modulation.....30%
Modulationsfrequenz.....400Hz



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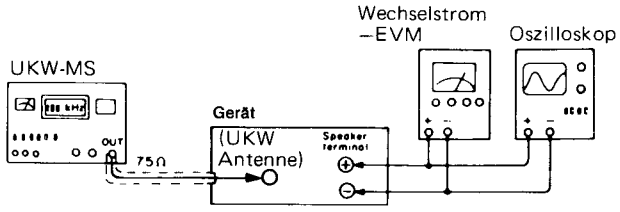
UKW-HF-JUSTIERUNG

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Das Gerät auf **"FM"** einstellen.
3. Die Radiofrequenz-Anzeige und den Meßsender auf **100.10 MHz** einstellen. Ein schwaches Signal eingeben, so daß in der Ausgangswellenform Rauschen enthalten ist.
4. **CT201** und **T201** so justieren, daß die Ausgangswellenform vertikal symmetrisch ist.

Anmerkung: Da drei Ausgangsmeßwerte vorhanden sein serden, sind die Justierungen bei der Mittenfrequenz vorzunehmen.

ZUSTAND DES UKW-MESSENDERS
Modulation 100%
Modulationsfrequenz 1kHz
Ausgangspegel ..... 66 dB

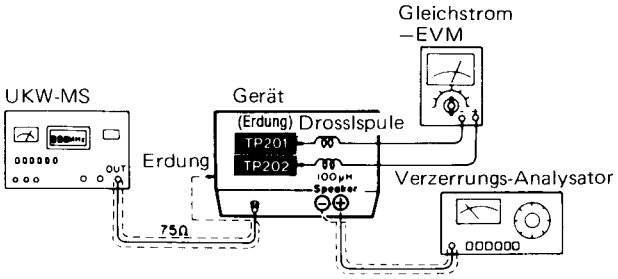


UKW-MONO-VERZERRUNGS-JUSTIERUNG

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Das Gerät auf **"FM"** einstellen.
3. Die Radiofrequenzanzeige und den Meßsender auf **100,10 MHz** einstellen.
4. Den Kern von **T203** so justieren, daß die im Signalzustand gemessene Spannung **0mV** (0 ± 30mV) im **300mV** Bereich beträgt.
5. **T204** so justieren, daß der Verzerrugsfaktor des linken Kanals minimal wird.
6. Schritte 4 und 5 einige Male wiederholen.
7. Überprüfen, daß die Verzerrungsfaktoren des linken und rechten Kanals fast gleich sind.

Anmerkung: Für die Justierung ist ein Schraubendreher aus Kunststoff zu verwenden.

ZUSTAND DES UKW-MESSENDERS Verzerrungs-Analysator
Modulation 100%
Modulationsfrequenz 1kHz
Ausgangspegel ..... 66 dB



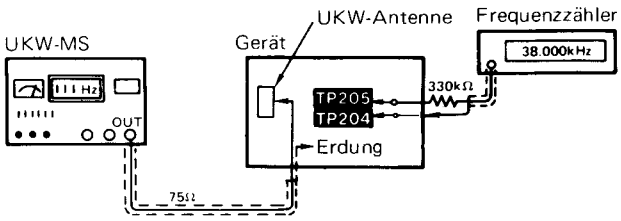
MPX-SGO-JUSTIERUNG

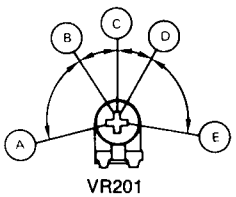
1. Der Testaufbau ist in der Abbildung gezeigt.
2. Den UKW-Bertriebsart-Wahlschalter indie **"FM/auto"**-Position stellen.
3. Radio und Meßsender auf **100.10 kHz** einstellen.
4. **VR201** auf **38 kHz ± 0.05 Hz** auf der Frequenzzähleranzeige justieren.

★ VERWENDUNG EINES ALTERNATIV-SYSTEMS

1. Stereosignal vom Meßsender eingeben oder eine Stereo-Sendung empfangen.
2. **VR201** justieren, bis die Stereo-Anzeige aufleuchtet. Den Arm von **VR201** mit Lack sichern, wie in der Abbildung gezeigt.

ZUSTAND DES UKW-MESSENDERS
Modulation .....0% (mon-modulation)
Ausgangspegel .....66 dB





Ⓐ – Ⓑ
Ⓑ – Ⓓ
Ⓓ – Ⓔ : Stereo AUS Position
: Stereo EIN Position
(Anzeige leuchtet)
Ⓒ : Punkt der Pilorschaltung justieren

MEßBEDINGUNGEN

- Überprüfen, ob die köpfe sauber sind.
- Überprüfen, ob die Bandantriebsachse und die Andruckrolle sauber sind.
- Dolby-Schalter: "**OFF**"

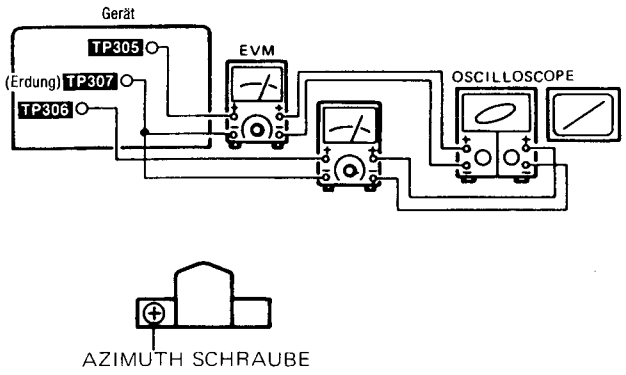
TEST BAND

- Koptazimut-Justierung (8 kHz, –20 dB); QZZCFM
- Justierung der Bandgeschwindigkeit (3 kHz, –10 dB), QZZCWAT
- Normales Referenz-Leerband; QZZCRA
- CrO_2-Referenz-Leerband; QZZCRX

D

KOPFAZIMUT-JUSTIERUNG (DECK A/B)

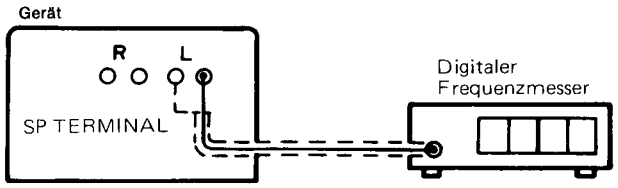
1. Die Anschlußverbindungen für die Testgeräte sind in Abbildung gezeigt.
2. Den Azimut-Justierungsteil (8 kHz, −20 dB) des Testbandes (QZZCFM) wiedergeben und die Winkeljustierungs-Einstellschraube so verstellen, daß der Ausgang vom linken und rechten Kanal maximal wird. (Wenn die Justierpositionen für den linken und rechten Kanal verschieden sind, ist eine Position zu finden, wo der Ausgang des linken und rechten Kanals ausgelichen ist, und dann ist die Justierung durchzuführen.)
3. Gleichzeitig eine Lissajous-Wellenform ziehen und Phasenablenkung eliminieren.
4. Nach ertolgter Justierung sind die Bandführungs-Höhen- und-Winkeljustierschrauben zu sichern.



BANDGESCHWINDIGKEITS-JUSTIERUNG (DECK A/B)

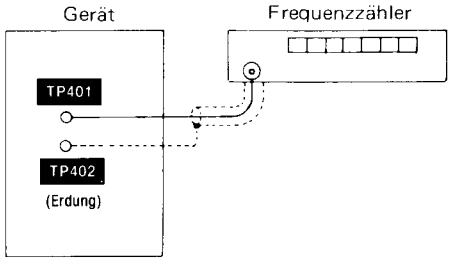
1. Der Testaufbau ist in Abbildung gezeigt.
2. Das Gerät auf **"TAPE"** einstellen.
3. Den mittleren Teil des Testbandes (QZZCWAT) Wiedergeben.
4. Den Drehwiderstand im Motor so justieren. Daß die Ausgangsleistung dem Standard -Wert entspricht.

Standard-West: 3000 ± 20 Hz



VORMAGNETISIERUNGS-OSZILLATIONS-JUSTIERUNG (DECK A)

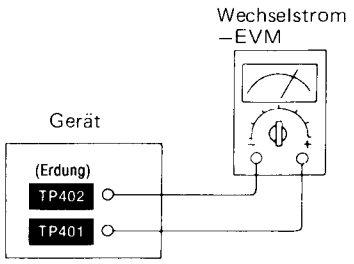
1. Der Testaufbau ist in der Abbildung gezeigt.
2. Das Gerät in die Position "**TAPE**" einstellen.
3. Das Cassettendeck auf Betriebsart **REC** einstellen. (QZZCRA)
4. **L401** auf eine Anzeige von **95 — 100 kHz** auf dem Frequenzmesser einstellen.



LÖSCHSTROMS-JUSTIERUNG (DECK A)

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Das Gerät in die Position "**TAPE**" einstellen.
3. Das Cassettendeck in die Betriebsart **REC** einstellen. (QZZCRA)
4. **VR401** auf eine Anzeige **70 ± 5 mV** dem elektronischen Wechselstrom-Voltmeter einstellen.

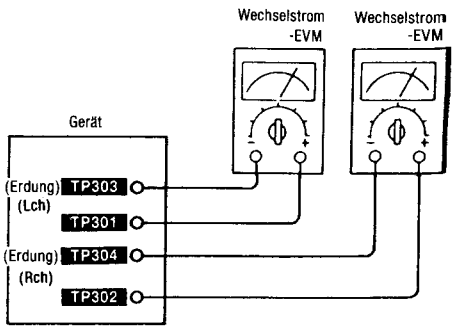
Standardwert: Normalband Mehrals 70 ± 5 mV
CrO_2-Band Mehrals 80 mV



AUFNAHME-VORMAGNETISIERUNG-JUSTIERUNG (DECK A)

1. Der Testaufbau ist in der Abbildlung gezeigt.
2. Das Gerät in die Position **TAPE** einstellen.
3. Das Cassettendeck in die Betriebsart **REC** einstellen. (QZZCRA)
4. **VR307** (linker Kanal) und **VR308** (rechter Kanal) auf eine Anzeige von **4,8 ± 0,1 mV** auf dem elektronischen Wechselstrom-Voltmeter einstellen.

Standardwert: Normalband 4,8 ± 0,1 mV
CrO_2-Band 5 — 8,0 mV



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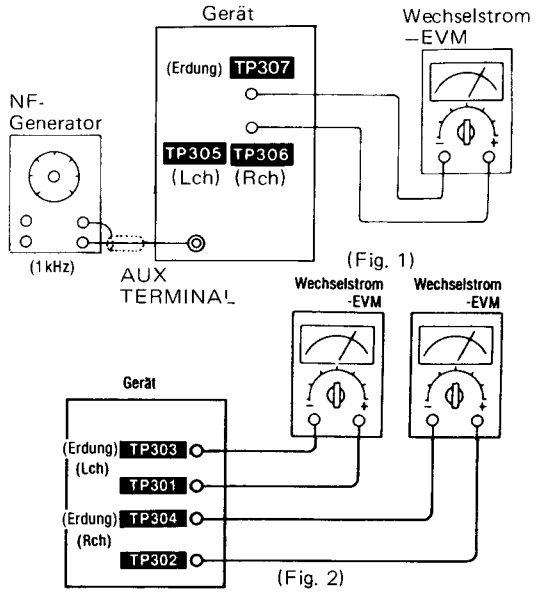
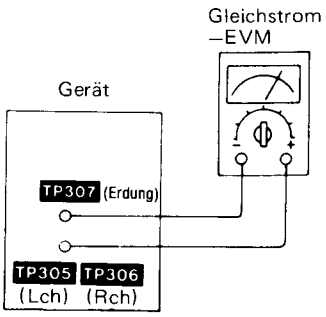
AUFNAHMESTROMS-JUSTIERUNG (DECK A)

1. Der Testaufbau ist in Abbildung 2 gezeigt.
2. Das Gerät in die Position "**TAPE**" einstellen und das Cassettendeck in die Betriebsart STOP einstellen.
3. "**ERASE HEAD**" und "**TP307 (Erdung)**" kurzschießen.
4. Das Cassettendeck in die Betriebsart **REC** einstellen.
5. Ein Tonfrequenz-Oszillatorsignal (1 kHz) an den **AUX**-Anschluß anlegen und den Eingangspegel so einstellen, daß die Anzeige auf dem elektronischen Wechselstrom-Voltmeter **410 ± 10 mV** beträgt.
6. Der Testaufbau ist in Abbildung 2 gezeigt.
7. Das Cassettendeck in die Betriebsart **REC** einstellen. (QZZCRA)
8. **VR305** (linker Kanal) und **VR306** (rechter Kanal) auf eine Anzeige von **0,38 ± 0,01 mV** auf dem elektronischen Wechselstrom-Voltmeter einstellen.



WIEDERGABE-VERSTÄRKUNG-JUSTIERUNG (DECK A/B)

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Die Testcassette **QZZCFM** (315 Hz) wiedergeben.
3. **VR301** und **VR302** (DECK B) und **VR303** und **VR304** (DECK A) auf eine Anzeige von **410 ± 10mV** auf dem elektronischen Voltmeter einstellen.



FRANCAIS

Ceci est à utiliser conjointement avec le manuel d'entretien du modèle No. SA-X800L.

■ MESURAGES ET REGLAGES

• LW/MW/FM

Positionnements des commandes et équipement utilisé.

- Générateur de signaux M.F. et A.M. (AM et FM-SG).
- Modulateur stéréophonique
- Analyseur de distorsion
- Oscilloscope
- Voltmètre électronique à C.A. et C.C. (EVM).
- Compteur de fréquence
- Bobine d'amortissement d'arrêt (100µH)
- Résistance (100kΩ)
- Condensateur céramique (200pF)

Nota: Pour **T202 (MW.** F.I.), **L210** (bobine oscil. de **MW** et **L211** (bobine Oscil. de **LW**) des éléments réglés sont fournis. Aussi, ne pas tourner les noyaux de ces pièces.

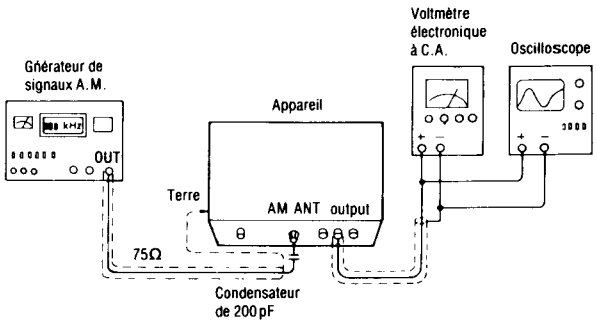
REGLAGE DE O.M.-H.F.

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Régler l'appareil sur la position "**MW**".
3. Régler le cadran radio et le générateur de signaux sur **612kHz.**
4. Régler **L208** pour une sortie maximale.
5. Régler le cadran radio et le générateur de signaux sur **1503kHz.**
6. Régler **CT202** pour une sortie maximale.
7. Répéter les étapes 3.~6.

Nota:

Le niveau d'entrée d'antenne doit être aussi bas que possible étant libéré de la commande automatique de gain.

CONDITION DU GENERATEUR DE SIGNAUX A.M.
Modulation.....30%
Fréquence de modulation 400Hz



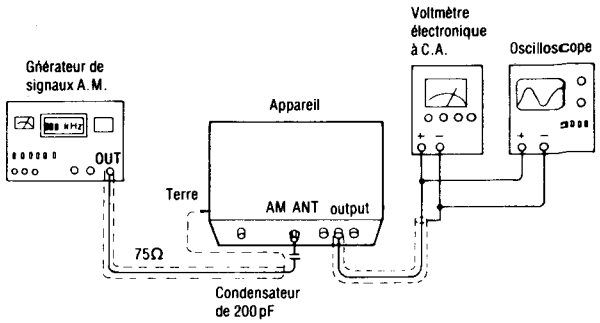
REGLAGE DE RE-LW

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Régler l'appareil sur la position "**LW**".
3. Ajuster le réglage de l'affichage de radiofréquence et du générateur de signaux sur **155kHz.**
4. Régler **L209** pour une sortie maximale.
5. Ajuster le réglage de l'affichage de radiofréquence et du générateur de signaux sur **353kHz.**
6. Régler **CT203** pour une sortie maximale.
7. Répéter les étapes 3.~6.

Nota:

Le niveau d'entrée d'antenne doit être aussi bas que possible étant libéré de la commande automatique de gain.

CONDITION DU GENERATEUR DE SIGNAUX A.M.
Modulation.....30%
Fréquence de modulation 400Hz



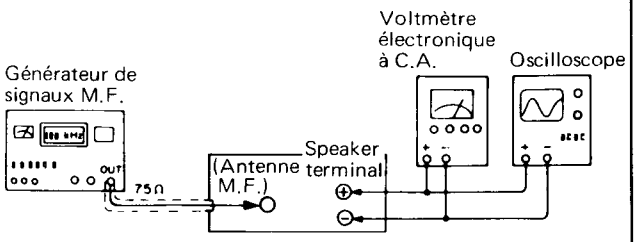
D

REGLAGE DE M.F.-H.F.

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Régler l'appareil sur la position **"FM"**.
3. Régler le cadran radio et le générateur de signaux sur **100.10 MHz**. Ajouter une faible entrée de telle sorte que le bruit erratique soit inclut dans la forme d'onde de sortie.
4. Ajuster **CT201** et **T201** de telle sorte que la forme d'onde de sortie soit verticalement symétrique.

Nota: Du fait que trois lectures de sortie seront présentes, les ajustements devront être faits à la fréquence nominale.

CONDITION DU GENERATEUR DE SIGNAUX M.F.
Modulation 100%
Fréquence de modulation ... 1 kHz
Niveau de sortie ..... 66 dB

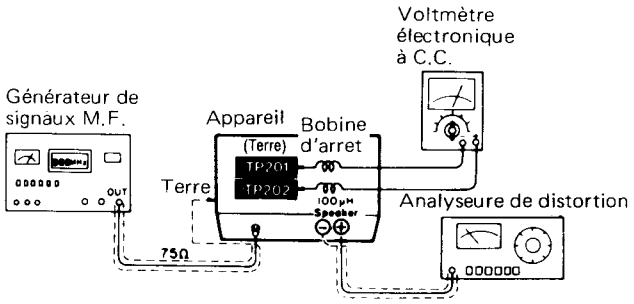


REGLAGE DE DISTORSION MONOPHONIQUE M.F.

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Régler l'appareil sur la position **"FM" (M.F.).**
3. Ajuster le réglage de l'affichage de radiofréquence et du générateur de signaux sur **100,10 MHz**.
4. Régler le noyau de **T203** de telle sorte que la tension mesurée sur le mode de signaux soit de **0 mV** (0 ± 30 mV) dans une plage de 300 mV.
5. Ajuster **T204** de telle que le facteur de distorsion du nal de gauche soit minimisé.
6. Répéter les étapes 4 et 5 quelques fois.
7. S'assurer que les facteurs de distorsion du canal de gauche et du canal de droite soient sensiblement les mêmes l'un par rapport à l'autre.

Nota: Le tournevis de réglage utilisé devra être fait en résines.

CONDITION DU GENERATEUR DE SIGNAUX M.F.
Modulation 100%
Fréquence de modulation ... 1 kHz
Niveau de sortie ..... 66 dB



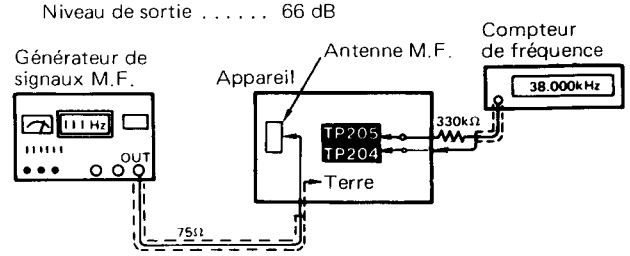
REGLAGE MULTIPLEX DE L'OSCILLATEUR COMMANDÉ PAR VARIATION DE TENSION

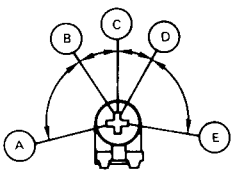
1. Le raccordement de L'équipement d'essai est montré sur la figure.
2. Régler l'appareil sur la position **"FM-auto"**.
3. Régler le cadran radio et le générateur de signaux sur **100,10 MHz**.
4. Ajuster **VR201** pour **38 kHz ± 0,05 Hz** sur le compteur de lecture de fréquences.

★ EN UTILISANT UN SYSTÈME ALTERNATIF

1. Applique un signal stéréo à partir du générateur ou recevoir une émission stéréo.
2. Ajuster **VR201** jusqu'à ce que l'indicateur stéréo s'éciaire. Coller le bras de **VR201** comme il montré sur la figure.

CONDITION DU GENERATEUR DE SIGNAUX M.F.
Modulation ..... 0% (mon-modulation)
Niveau de sortie ..... 66 dB





VR201

Ⓐ – Ⓑ
Ⓑ – Ⓓ
: Position de HORS CIRCUIT "Stéréo".
Ⓓ – Ⓔ : Position de MISE EN CIRCUIT "Stéréo". (Eclairage de l'indicateur)
Ⓒ : Point de réglage du circuit pilote.

BANDE D'ESSAI

- Réglage de l'angle des tetes de lecture (8 kHz, −20 dB), QZZCFM
- Réglage de la vitesse de défilement de la bande (3 kHz, −10 dB); QZZCWAT
- Interrupter de réduction de bruit: **"OFF"**

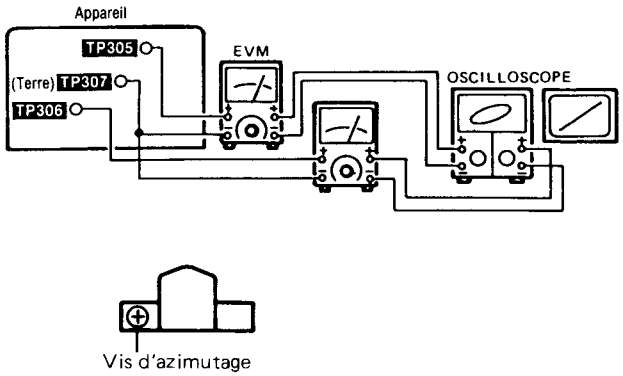
CONDITIONS POUR LE MESURAGE

- S'assurer que les têtes soient propres.
- S'assurer que le cabestan les galets-presseurs soient propres.
- Bande vierge de référence normale; QZZCRA
- Bande vierge de référence CrO_2; QZZCRX

D

RÉGLAGE DE L'ANGLE DES TÊTES DE LECTURE (DECK A/B)

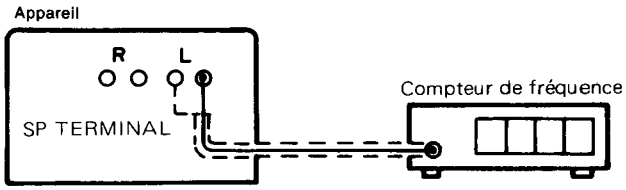
1. Le raccordement de L'équipement d'essai est montré à la figure de droite.
2. Faire jouer la partie réglée azimutale (8 kHz, −20 dB) de la bande d'essai (QZZCFM) et. régler la vis de mise au point azimutale de telle sorte que les puissances de sortie du canal de gauche et du canal de droite soient au maximum. (Si les positions de réglage du canal de gauche et du canal de droite sont différentes, trouver une position où les puissances de sortie des canaux de gauche et de droite soient équilibrées, puis effectuer la mise au point.)
3. En même temps, établir une forme d'onde de Lissajous et éliminer la déviation de phase.
4. Après le réglage, bloque les vis du réglage angulaire et de la hauteur des guides de bande.



REGLAGE DE LA VITESSE DE DÉFILEMENT DE LA BANDE (DECK A/B)

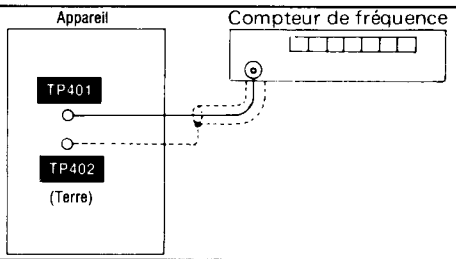
1. Le raccordement de l'equipement d'essai est montré à la figure de droite.
2. Régler l'appareil sur la position **"TAPE"**.
3. Faire jouer la partie centrale de la bande d'essai (QZZCWAT).
4. Régler VR dans le moteur de telle sorte que la puissance de sortie soit en deçà de la normale.

Valeur normalisée: 3000 ± 20 Hz



REGLAGE DE L'OSCILLATION DE POLARISATION (DECK A)

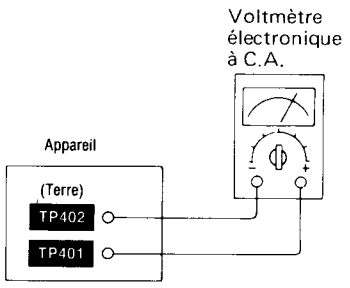
1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Placer l'appareil sur la position **"TAPE"** (bande).
3. Placer la platine pour cassette sur le mode **"REC"** [enregistrement (QZZCRA)].
4. Ajuster **L401** pour obtenir une lecture de **95—100kHz** sur le compteur de fréquences.



REGLAGE DU COURANT D'EFFACEMENT (DECK A)

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Placer l'appareil sur la position **"TAPE"** (bande).
3. Placer la platine pour cassette sur le mode **"REC"** [enregistrement (QZZCRA)].
4. Ajuster **VR401** pour obtenir **70±5mV** sur le voltmètre électronique.

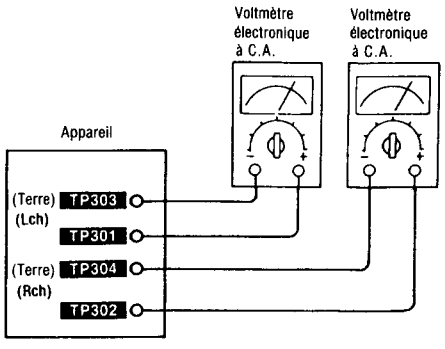
Valeur standard:	Bande normale	Plus de 70±5mV
	Bande CrO_2	Plus de 80mV



REGLAGE DE LA POLARISATION D'ENREGISTREMENT (DECK A)

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Placer l'appareil sur la position **"TAPE"** (bande).
3. Placer la platine pour cassette sur le mode **"REC"** [enregistrement (QZZCRA)].
4. Ajuster **VR307** (canal de gauche) et **VR308** (canal de droite) pour obtenir **4,8 ± 0,1mV** sur le voltmètre électronique de C.A.

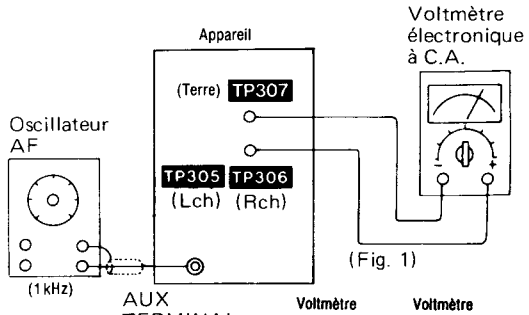
Valeur standard:	Bande normale	4,8±0,1mV
	Bande CrO_2	5−8,0mV



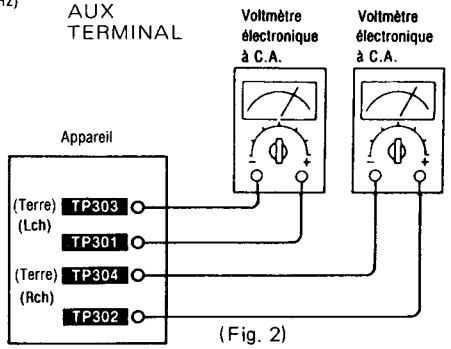
D

REGLAGE DU COURANT D'ENREGISTREMENT (DECK A)

1. Le raccordement de l'équipement d'essai est montré sur l'illustration. (Fig. 1)
2. Placer l'appareil sur la position "**TAPE**" (auxiliaire) et la platine pour cassette sur le mode **"STOP"** (arrêt).
3. Court-circuiter à "**ERASE HEAD**" et **TP307 (Terre).**
4. Placer la platine pour cassette sur le mode **"REC"** (enregistrement).
5. Fournir un signal (1 kHz) oscillateur de fréquence audio à la borne **"AUX"** (auxiliaire) et régler le niveau d'entrée pour obtenir **410 ± 10 mV** sur le voltmètre électronique de C.A.
6. Le raccordement de l'équipement d'essai est montré sur l'illustration. (Fig. 2)
7. Placer la platine pour cassette sur le mode **"REC"** [enregistrement (QZZCRA)].
8. Ajuster **VR305** (canal de gauche) et **VR306** (canal de droite) pour obtenir **0,38 ± 0,01 mV** sur le voltmètre électronique de C.A.



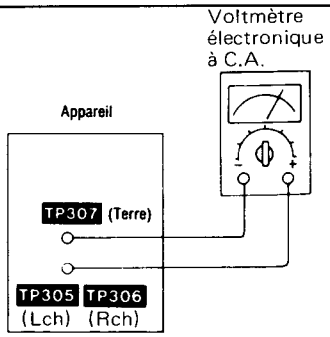
(Fig. 1)



(Fig. 2)

REGLAGE DE L'AMPLIFICATION DE LECTURE (DECK A/B)

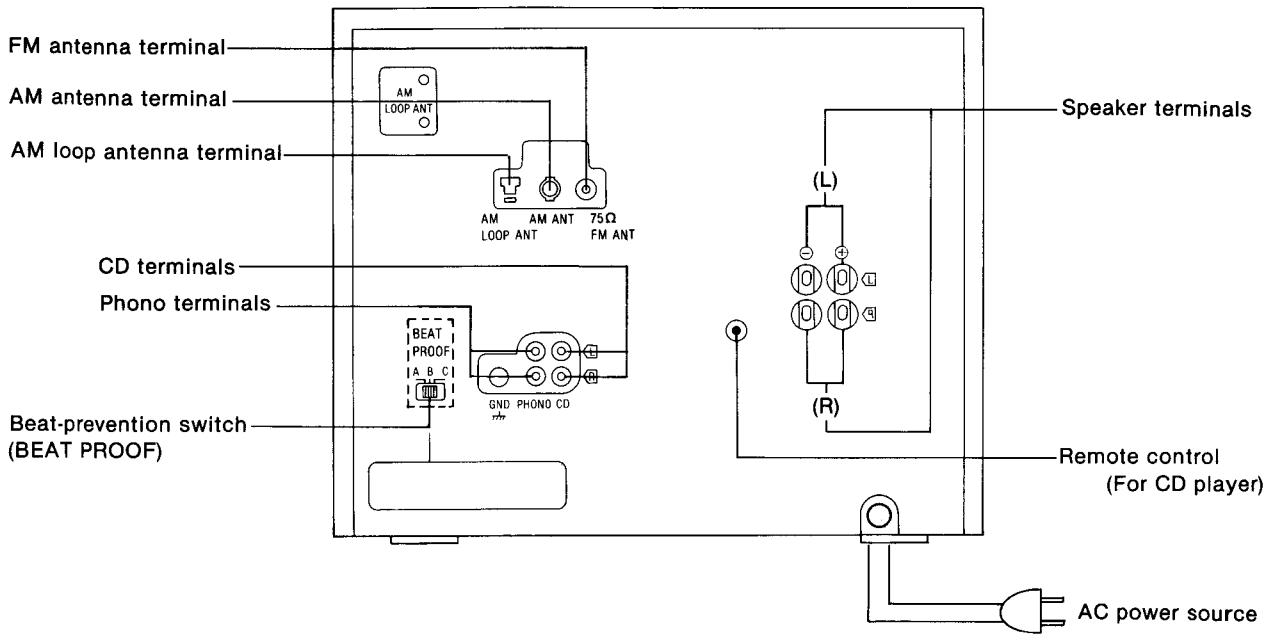
1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Bande d'essai de lecture **QZZCFM** (315 Hz).
3. Ajuster **VR301, 302** (DECK B) et **VR303, 304** (DECK A) pour obtenir **410 ± 10mV** sur le voltmètre électronique de C.A.



Printed in Japan
H870404300 YY/IM

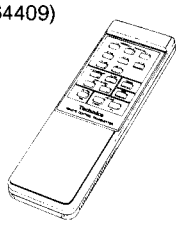
D

• **Rear Panel**

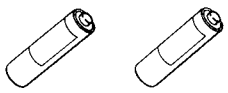


■ ACCESSORIES

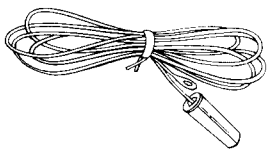
• Remote-control transmitter 1
(EUR64409)



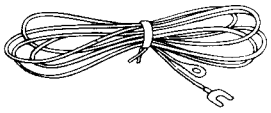
• Batteries 2
(UM-3NE-2P)



• FM indoor antenna 1
(SSA269M [XL])
(SSA270M [E, E5, EB, EF, EK, EH])

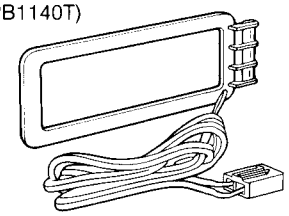


(For continental Europe)

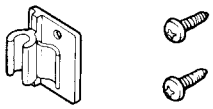


(For Australia and Others)

• AM loop antenna 1
(SPB1140T)



• AM antenna holder 1
(SMA231M) (XTN3+10AFZ)

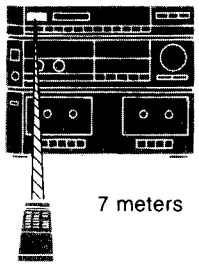


D

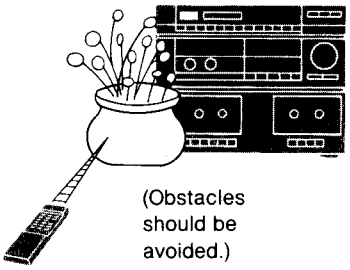
■ REMOTE-CONTROL TRANSMITTER

Remote-control transmitter operation notes

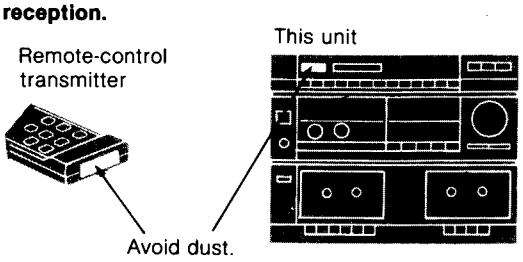
Use the remote-control transmitter within 7 meters.



Face it toward the remote-control signal receptor.



Be sure the transmitter part of the remote-control transmitter and the receptor part of this unit are free from dust. Excessive dust might prevent reception.



Operation

Be sure to turn the unit's power on before use.
Note that power can not be turned on and off by the remote-control transmitter.

Listening to compact discs

(For Technics compact disc player with the remote-control terminals.)

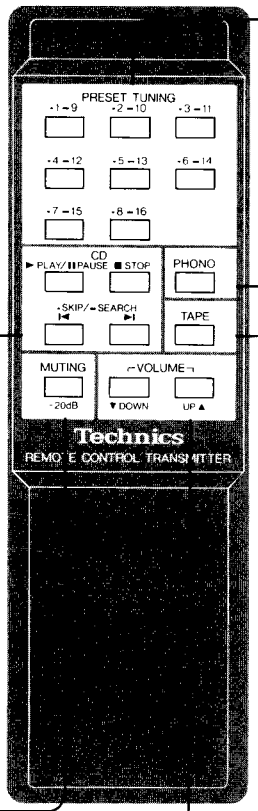
"▶ PLAY/❚❚ PAUSE":
Press to start disc play.
(When pressed during disc play, the play will stop temporarily.)

"■ STOP":
Press to stop disc play.

"⏮SKIP/SEARCH⏭":
- Press (momentarily) to select the tune number. (There is an advance of one tune for each time pressed.)
- For fast advance or fast reverse during tune play, press and hold; release when the desired tune is reached.

⏮: for backward
⏭: for forward
(Refer to the operating instructions of the compact disc player.)

(EUR64409)



Listening to radio broadcasts

Tuner preset-tuning buttons (PRESET TUNING)
Press to select a preset "channel".

Listening to the various sound sources

"PHONO":
Press to select the program source ("PHONO").

"TAPE":
Press to select the program source ("TAPE").

While listening to music

Amplifier muting button (MUTING)
Press this button if necessary to temporarily reduce the volume level.
Press once again to return to the previous volume level.

Amplifier volume control (VOLUME/▼ DOWN • ▲ UP)
Adjust the volume level.
(The volume level is indicated by the volume/balance level indicator on this unit.)

After listening is finished

After listening is finished, be sure to reduce the volume level, and turn the power off.
Note:
The input selection, the volume level, the muting settings will be kept as they were at the time when the power is turned off.

D

■ PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following condition is noticed:
- No sound is heard when the power is turned on.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.

If this occurs, follow the procedure outlined below.
1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again.

Note:
When the protection circuitry functions, the unit will not operated unless the power is first turned off and then on again.

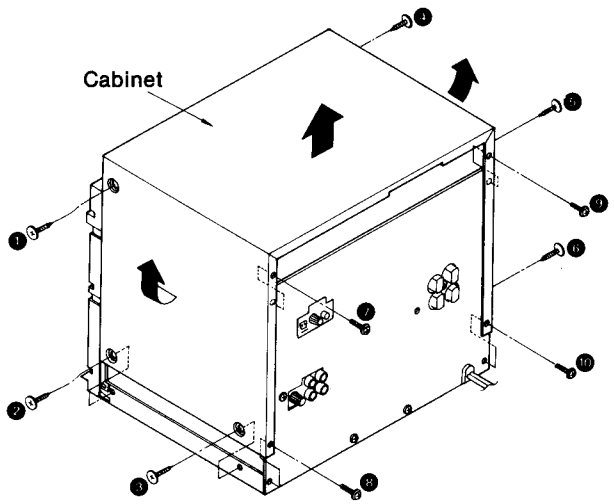
■ BEFORE REPAIR AND ADJUSTMENT

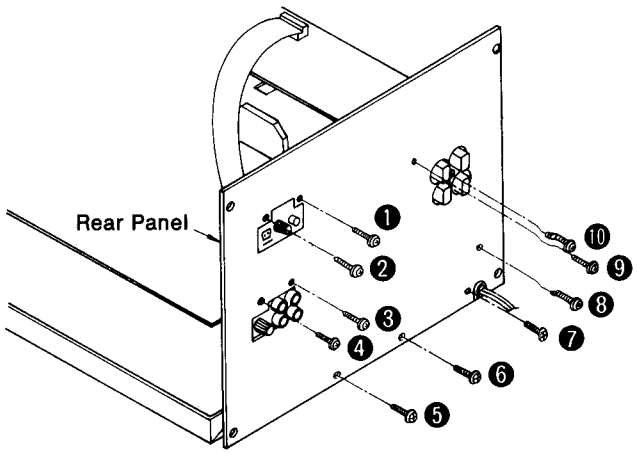
1. Turn off the power, Discharge both power supply capacitors (C702, C703 3300μF) through a 10Ω 5W resistor to ground. Do not short between C702 and C703. It may damage the capacitors.
2. After completion of repair, slowly apply the primary voltage by using a variac to avoid over current. Current consumption at 50Hz/60Hz in no signal mode should by shown with respect to supply voltage 220V/240V.

Power supply voltage		AC 220V	AC 240V
Consumed current	50/60Hz	60~160mA	50~150mA

■ DISASSEMBLY INSTRUCTIONS

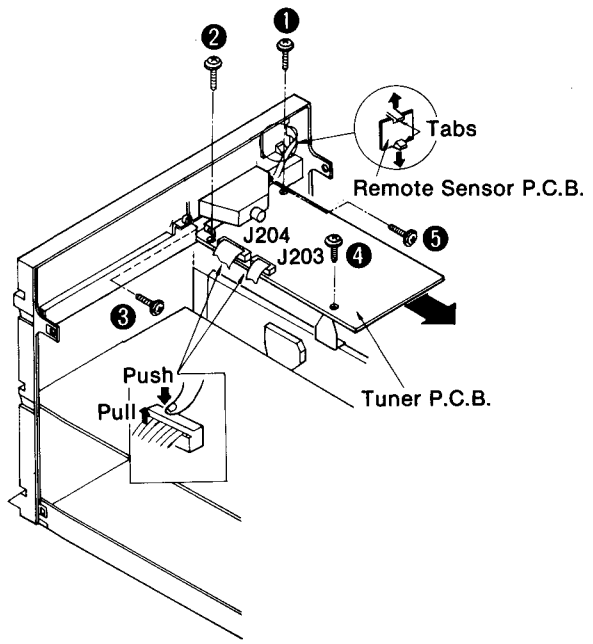
Ref. No. 1	How to remove the cabinet	Ref. No. 2	How to remove the rear panel
Procedure 1	• Remove the 10 screws (❶~⑩).	Procedure 1→2	• Remove the 10 screws (❶~⑩).



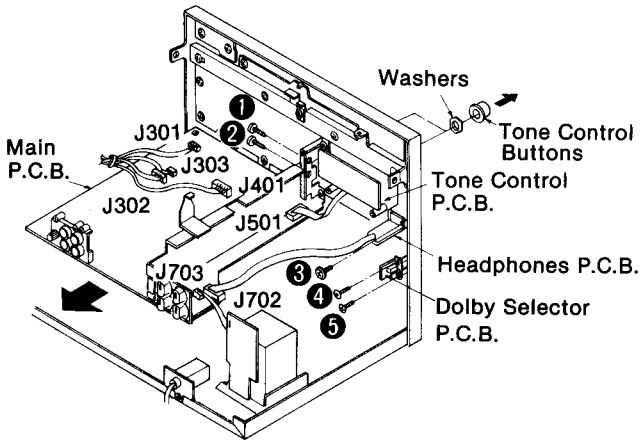


D

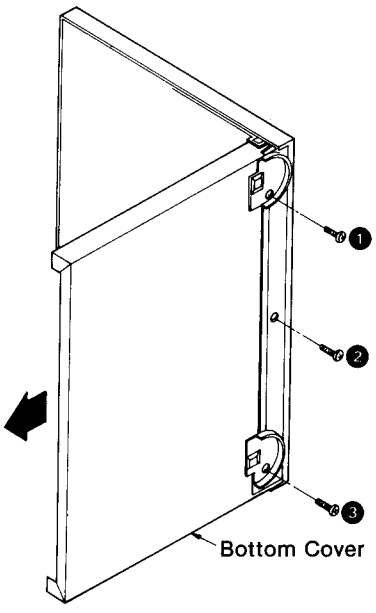
Ref. No. 3	How to remove the tuner P.C.B. and remote sensor P.C.B.
Procedure 1→2→3	• Remove the 5 screws (❶~❺). • Remove the 2 connectors (J203, J204). • Remove the 2 tabs.



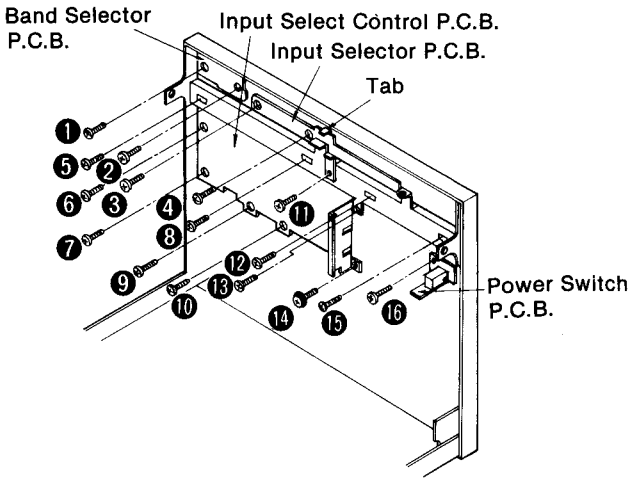
Ref. No. 4	How to remove the main P.C.B., headphones P.C.B., dolby selector P.C.B. and tone control P.C.B.
Procedure 1→2→4	1. How to remove the main P.C.B. • Remove the 2 screws (❶, ❷). • Remove the 4 connectors (J301~ 303, J401). 2. How to remove the jack P.C.B. • Remove the 1 screw (❸). 3. How to remove the dolby NR switch P.C.B. • Remove the 2 screws (❹, ❺). 4. How to remove the tone control P.C.B. • Remove the 2 washers.



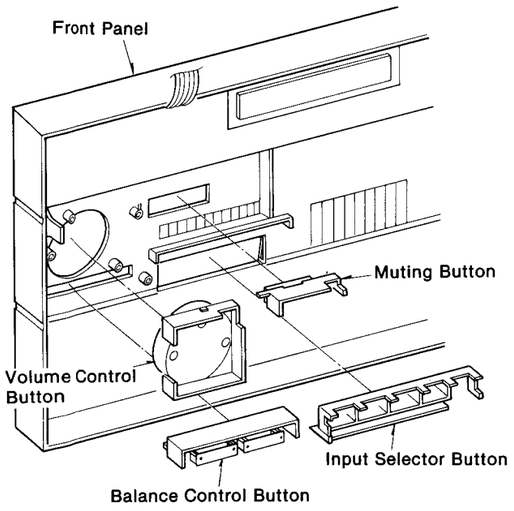
Ref. No. 5	How to remove the bottom cover
Procedure 1→2→5	• Remove the 3 screws (❶~❸). • Remove the 1 connector (J703) of main P.C.B.



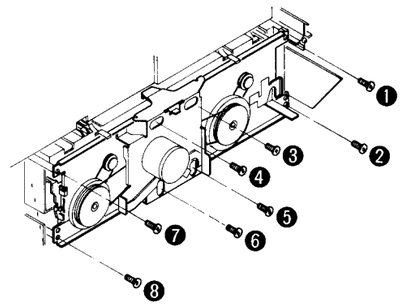
Ref. No. 6	How to remove the band selector P.C.B., input selector P.C.B., input select control P.C.B. and power switch P.C.B.
Procedure 1→2→3→ 4→6	1. How to remove the band selector P.C.B. • Remove the 2 screws (❶, ❷). 2. How to remove the key switch P.C.B. • Remove the 2 screws (❸, ❹). 3. How to remove the AMP P.C.B. • Remove the 11 screws (❺~⓯). 4. How to remove the power switch P.C.B. • Remove the 1 screw (⓰).



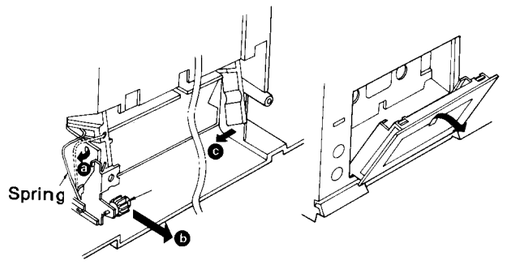
Ref. No. 7	How to remove the volume control button, muting button, balance control button and input selector button
Procedure 1→2→3→ 4→6→7	• Remove the buttons from guide pin.



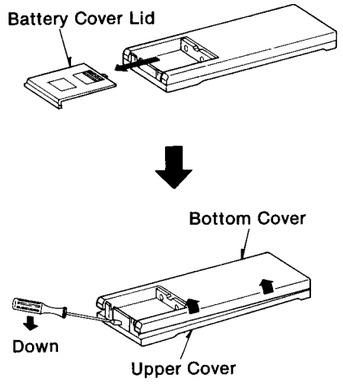
Ref. No. 8	How to remove the mechanism (DECK A, B) unit
Procedure 1→2→3→ 4→8	• Remove the 8 screws (❶~❽). • Remove the 4 connectors (J301~303, 401).



Ref. No. 9	How to remove the cassette lid
Procedure 1→2→3→ 4→8→9	• Remove the spring in the direction of allow (ⓐ) damper gear assembly in the direction of allow (ⓑ) with radio pliers or the like. • Draw out the cassette holder lid in the direction of allow (ⓒ).



Ref. No. 10	How to remove the remote control
Procedure 10	• Remove the Battery cover lid. • Insert a screwdriver blade between the upper and lower covers inside the battery compartment and them slowly loosen the bottom cover.



■MEASUREMENTS AND ADJUSTMENTS

● LW/MW/FM

Control positions and equipment used

- AM and FM signal generator (AM and FM-SG)
- Stereo modulator
- Distortion analyser
- Oscilloscope
- AC and DC electronic voltmeter (EVM)
- Frequency counter
- Choke coil (100μH)
- Resistor (100kΩ)
- Ceramic capacitor (200pF)
- AM dummy antenna

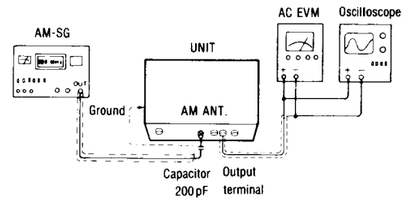
Note: For **T202 (MW IFT), L210 (MW OSC coil)** and **L211 (LW OSC coil),** adjusted parts are supplied. So, do not turn the cores of this parts.

MW-RF ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "**MW**" position.
3. Place the radio dial and signal generator setting to **612kHz.**
4. Adjust **L208** for maximum output.
5. Place the radio dial and signal generator setting to **1503kHz.**
6. Adjust **CT202** for maximum output.
7. Repeat steps 3.~6.

Note:
Antenna input level must be as low as possible being free from AGC.

AM SIGNAL GENERATOR CONDITION
Modulation.....30%
Modulation frequency.....400Hz

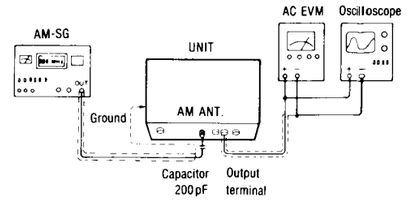


LW-RF ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "**LW**" position.
3. Place the radio frequency display and signal generator setting to **155kHz.**
4. Adjust **L209** for maximum output.
5. Place the radio frequency display and signal generator setting to **353kHz.**
6. Adjust **CT203** for maximum output.
7. Repeat steps 3.~6.

Note:
Antenna input level must be as low as possible being free from AGC.

AM SIGNAL GENERATOR CONDITION
Modulation.....30%
Modulation frequency.....400Hz

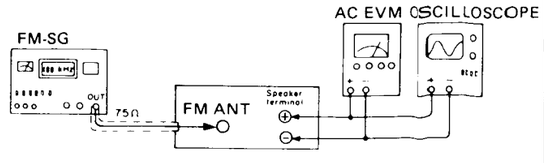


FM-RF ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Place unit into "**FM**" position.
3. Place the radio dial and signal generator setting to **100.10MHz.** Add weak input so that noise is included in the output waveform.
4. Adjust **CT201** and **T201** so that the output waveform is vertically symmetrical.

Note:
As three output reading will be present, adjustments must be made at center frequency.

FM SIGNAL GENERATOR CONDITION
Modulation.....100%
Modulation frequency.....1kHz
Output level.....66dB



D

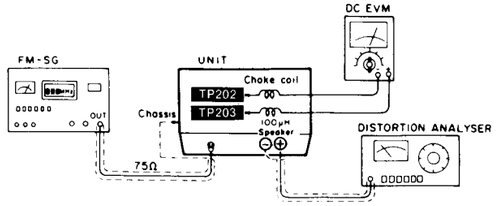
FM MONO DISTORTION ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "**FM**" position.
3. Place the radio frequency display and signal generator setting to **100.10MHz**.
4. Adjust **T203** core so that voltage measured in signal mode is **0mV (0±30mV)** in **300mV** range.
5. Adjust **T204** so that the distortion factor of Lch is minimized.
6. Repeat steps 4 and 5 a few times.
7. Make sure that the distortion factors of Lch and Rch are nearly the same with each other to minimum.

Note:

The adjusting screwdriver used should be made of resin.

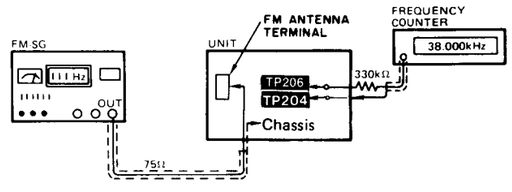
FM SIGNAL GENERATOR CONDITION
Modulation..... 100%
Modulation frequency..... 1kHz
Output level..... 66dB



MPX VCO ADJUSTMENT

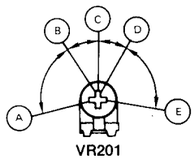
1. Test equipment connection is shown in figure.
2. Set the unit to **"FM auto"** position.
3. Place the radio dial and signal generator setting to **100.10 MHz.**
4. Adjust **VR201** for **38kHz ± 0.05kHz** on frequency counter reading.
5. Modulate the pilot by 8% and make sure that the stereo EYE lights up.

FM SIGNAL GENERATOR CONDITION
Modulation . . . . . 0% (non-modulation)
Output level 66dB



★ USING ALTERNATE SYSTEM

1. Apply stereo signal from generator or receive the stereo broadcast.
2. Adjust **VR201** until stereo indicator lights up. Cement arm of **VR201** as shown in figure.



Ⓐ – Ⓑ Ⓓ – Ⓔ : Stereo OFF position
Ⓑ – Ⓓ : Stereo ON position (indicator lighting)
Ⓒ : Adjust point of Pilot circuit

•CASSETTE

MEASUREMENT CONDITION:

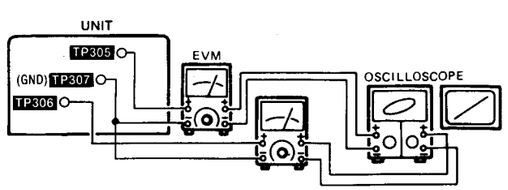
- Make sure heads are clean.
- Make sure capstan and pressure roller are clean.
- Make sure beat-proof switch is "**A**".
- DOLBY NR SW: "**OFF**"

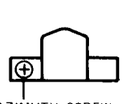
TEST TAPE:

- Head azimuth adjustment (8kHz, −20dB): QZZCFM
- Tape speed adjustment (3kHz, −10dB): QZZCWAT
- Normal reference blank: QZZCRA
- CrO_2 reference blank: QZZCRX

HEAD AZIMUTH ADJUSTMENT (DECK A/B)

1. Test equipment connection is shown in figure.
2. Playback the azimuth adjusted part (8kHz, −20dB) of the test tape (QZZCFM) and regulate the angle adjusting screw so that the outputs of L-CH and R-CH are maximized. (When the adjusting positions are different with L-CH and R-CH, find a position where are the outputs of L-CH and R-CH are balanced, and then mark the adjustment.)
3. At the same time, draw a lissajous waveform and eliminate phase deflection.
4. After the adjustment, apply screw-lock to the angle adjusting value.



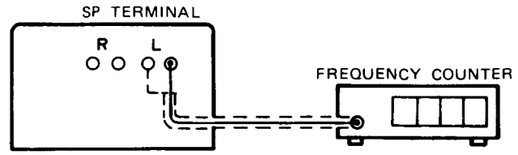


D

TAPE SPEED ADJUSTMENT (DECK A/B)

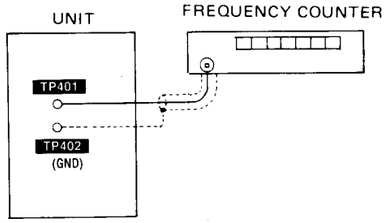
1. Test equipment connection is shown in figure.
2. Place unit into "**TAPE**" position.
3. Playback the middle part of the test tape (QZZCWAT).
4. Adjust the VR in the motor so that the output is within the standard.

Standard value: 3000 ± 20Hz



BIAS OSCILLATION ADJUSTMENT (DECK A)

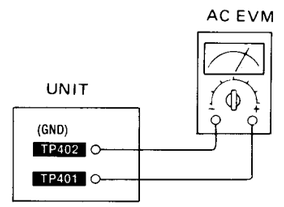
1. Test equipment connection is shown in figure.
2. Place unit into "**TAPE**" position.
3. Place cassette deck into **REC** mode. (QZZCRA)
4. Adjust **L401** for **95~100kHz** on frequency counter reading.



ERASE CURRENT ADJUSTMENT (DECK A)

1. Test equipment connection is shown in figure.
2. Place unit into "**TAPE**" position.
3. Place cassette deck into **REC** mode. **(QZZCRA)**
4. Adjust **VR401** for **70±5mV** on AC Electronic Voltmeter. (AC EVM)

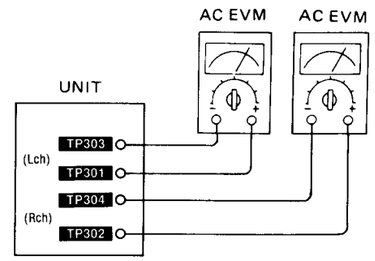
Standard value: Normal tape	More than **70±5mV**
CrO_2 tape	More than **80mV**



RECORDING BIAS ADJUSTMENT (DECK A)

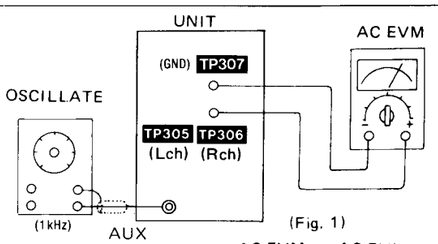
1. Test equipment connection is shown in figure.
2. place unit into "**TAPE**" position.
3. Place cassette deck into **REC** mode. (QZZCRA)
4. Adjust **VR307** (Lch) and **VR308** (Rch) for **4.8±0.1mV** on AC Electronic Voltmeter (AC EVM)

Standard value: Normal tape	**4.8±0.1mV**
CrO_2 tape	**5~8.0mV**

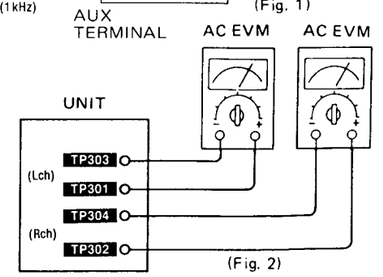


RECORDING CURRENT ADJUSTMENT (DECK A)

1. Test equipment connection is shown in figure. (Fig.1)
2. Place unit into "**TAPE**" position and cassette deck into **STOP** mode.
3. Short circuitry to "**ERASE HEAD**" and **TP307 (GND).**
4. Place cassette deck into **REC** mode.
5. Supply AF Oscillator signal (1 kHz) into **AUX** terminal and adjust the input level to get **410±10mV** on AC Electronic Voltmeter (AC EVM)
6. Test equipment connection is shown in figure. (Fig. 2)
7. Place cassette deck into **REC** mode. (QZZCRA)
8. Adjust **VR305** (Lch) and **VR306** (Rch) for **0.38±0.01 mV** on AC Electronic Voltmeter (AC EVM)



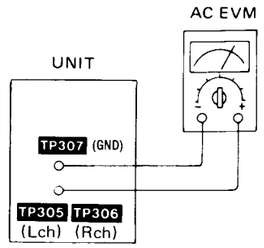
(Fig. 1)



(Fig. 2)

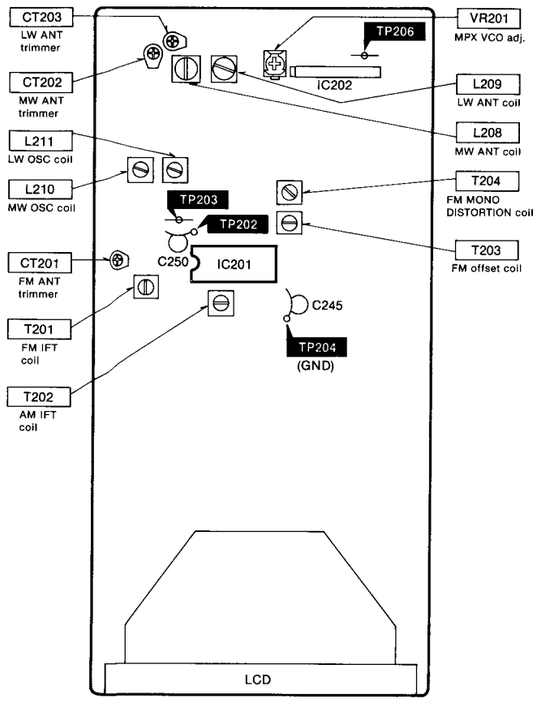
PLAYBACK GAIN ADJUSTMENT (DECK A/B)

1. Test equipment connection is shown in figure.
2. Playback test tape **QZZCFM** (315Hz)
3. Adjust **VR301, 302** (DECK B) and **VR303, 304** (DECK A) for **410±10mV** on AC Electronic Voltmeter (AC EVM).

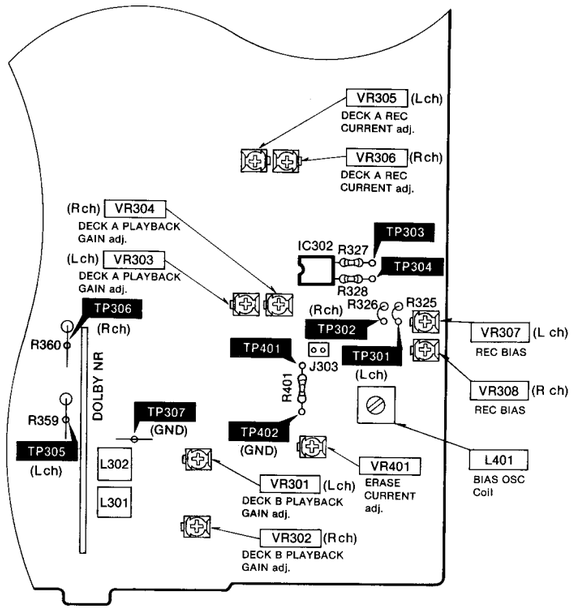


• Adjustment Points

• Tuner P.C.B.

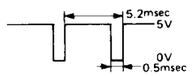
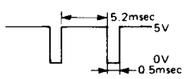
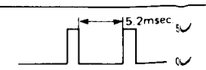


• Main P.C.B.



■ FUNCTION OF TERMINAL

• IC203 (μPD1718G514) PLL controller

PIN NO.	IN/OUT	MARK	DESCRIPTION OF TERMINAL
1 ~ 4, 34 ~ 52	OUTPUT	LCD4 ~ LCD1, LCD23 ~ LCD5	Segment signal output terminal for display.
5	OUTPUT	COM2	Common signal output terminal connected to LCD. Output is delivered in 3 values of ground, 1/2V_{DD} and V_{DD} (at 5ms intervals) in a period of 50Hz. The segment turns ON when the difference in voltage is $\pm V_{DD}$ between these terminals and LCD1~LCD23.
6		COM1	
7	INPUT	V_{DD}	Power supply terminal of device. Voltage of 5V±10% is supplied during operation of device. To hold the internal date memory (RAM), the voltage can be decreased to 2.5V. **Note:** Pins 7 and 33 are connected inside the chip. It is unnecessary to supply voltage to the pins.
33		V_{DD}	Not used in this unit.
8	INPUT	FM	Input is local oscillator output (VCO) in a range of 10~130MHz (0.3Vp-p, min.). There are 1/2 fixed frequency division prescaler and 2-step (1/32, 1/33) prescaler internally. Therefore, when deciding the frequency dividing value of programmable divider, it must be decided from the frequency obtained by halving the local oscillator output (VCO).
9	INPUT	AM	Input is local oscillator output (VCO) in a range of 0.5~20MHz (0.1Vp-p, min.). When the mode is shifted to FM, the AM terminal voltage automatically becomes the supply voltage of device.
10	———	GND	Ground terminal.
11	———	E01	Not used in this unit.
12	OUTPUT	E02	When the divided oscillator frequency is higher than the standard frequency, H-level output is delivered from these terminals. When it is lower, L-level (0V) output is delivered. When they coincide, it results in floating.
13	INPUT	CE	Device selection signal input terminal. The signal level should be high when the device is operated, and low when not operated. With this terminal shifted to low level, LCD (liquid crystal display) turns off and the memory is held.
14	———	NC	Not used in this unit.
15	OUTPUT	X1	Connecting terminal for crystal oscillator. The crystal connected is 4.5MHz.
16	INPUT	X2	
17	INPUT	A3 (SD)	Terminal to put in stop signal during auto tuning. The voltage is 5V with broadcast received, and 0V without broadcast received.
18	INPUT	A2 (REMOTE CONTROL)	This is the interrupt demand signal input terminal. The signal from the control input terminal is put into this terminal, demanding for interruption, then the flow of program will be unconditionally shifted to the address No. 1.
19	OUTPUT	A1 (FM)	FM/AM output terminal. (FM → 5V, AM → 0V)
20	OUTPUT	A0 (MONO)	Auto/mono changeover output terminal. (auto → 0V, mono → 5V)
21 ~ 24	INPUT	KEY 3 ~ KEY 0	Input terminal for key return signal from external key matrix. 
25 ~ 28	OUTPUT	PB3 ~ PB0	Output terminal for key return signal to external key matrix. 
29	OUTPUT	PC3	Terminal for FM IF ceramic filter frequency compensation. A pulse is generated when the voltage of terminal 13 rises.
30	OUTPUT	PC2	Output terminal for key return signal to let the stereo indicator light up. 
31	OUTPUT	PC1	Not used in this unit.
32	OUTPUT	PC0	Muting signal output terminal. Muting signal is delivered during operation of FM/AM selector switch and tuning switch. (4V during muting)

[KEY MATRIX]

Pin No.	25	26	27	28	29
21	UP	MW	CH5/13	CH1/9	—
22	DOWN	LW	CH6/14	CH2/10	—
23	—	FM	CH7/15	CH3/11	MEMORY
24	—	MODE	CH8/16	CH4/12	—

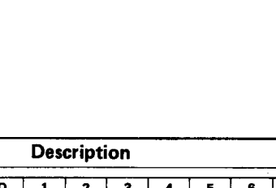
D

• IC801 (LC6523C−3068) Microcomputer

Pin No.	Mark	Description
①	LED 4	"L" level output is given to each pin according to the volume attenuation in order to light up the volume level LED.
③	LED 5	
④	LED 6	
⑤	LED 7	
㉘	LED 1	
㉙	LED 2	
㉚	LED 3	
⑥	BACK-UP	• When this pin is at "L" level, the microcomputer is operated by the back-up circuit. (No. ⑲ pin alone receives an input, all the others not.) • When this pin is at "H" level, No.⑨pin (POWER ON) gives an "L" level output if No. ⑫ pin (POWER SW) is at "H" level. No.⑨pin (POWER ON) is at "H" level, however, if the remote control's power on/off RAM data are off.
⑦	REMOTE	• Data codes reach here from the remote control receiver. (For data codes, refer to the remote control transmitter description.) • The compact disc player's data codes are outputted from the light receiver direct to the player.
⑧	AMP	• When this pin receives an "H" level input, the amplifier turns on to start the operation. • When this pin receives an "L" level input, the amplifier turns off to stop receiving the matrix key. Power on/off code alone is used to enable the remote control. • Just when this pin's input comes from "H" to "L" level, the LED1 ~ LED7 and LOUD pins become "H".
⑨	POWER ON (NC)	• A rising level ("H" level) is detected at No. ⑩ pin to give an "L" level output to No.⑨pin (POWER ON). • When No. ⑩ pin is at "L" level, No.⑨pin is given an "H" level output (POWER OFF).
⑩	POWER SW	
⑪	DECK	**Not used in this unit.**
⑫	ST/DTS	• When "Tuner" code is fed from the remote control to No.⑦pin, The DTS code is outputted at pin No. ⑫ SELECTOR code is then outputted to make the input selector into TUNER mode. • If the remote control's CH button has been kept depressed for longer than 1.5 seconds, 15 output pulses (AM code) are fed to the tuner and the number of pulses for a specified channel is given. • If the button has been released within 1.5 seconds 13 output pulses (FM code) are fed to the tuner and the number of pulses for a specified channel is given.
⑬	DATA/S1	Together with No. ⑫ pin, Volume UP/DOWN, Balance L/R and Loudness signals are fed to the attenuator IC.
⑭	CLK	
⑮	OSC 2	Crystal hook-up terminals for internal clock oscillator.
⑯	OSC 1	
⑲	RES	Reset pulse input terminal. When a reset is made by the back-up circuit using electrolytic capacitors alone, 3 or 4 control RAM data are checked by the program. COLD START is activated when abnormal, HOT START when normal.
⑳	K2	Input terminals for matrix keys. (Refer to Note)
㉑	K1	
㉒	K0	
㉓	D_A/SO	Input selector 4-bits BCD codes are outputted with Remote Control codes. * With Turntable "START" code, the output is given in the order of No. 1 → No. 2 → No. 6 → No. 1. No. 8 code: Not provided in this unit's with remote control.
㉔	D_B	
㉕	D_C	
㉖	D_D	
㉗	LOUD (NC)	Loudness on/off signal output terminal. * By pressing the LOUDNESS key, an "L" level output is given at this pin to turn on the loudness switch. Push the key again, and an "H" level output will come to turn off the loudness switch.

−dB / LED	Pin No.	1 ㉘	2 ㉙	3 ㉚	4 ①	5 ③	6 ④	7 ⑤
0 ~ −4dB		○	○	○	○	○	○	○
−6 ~ −10		○	○	○	○	○	○	
−12 ~ −18		○	○	○	○	○		
−20 ~ −26		○	○	○	○			
−28 ~ −36		○	○	○				
−38 ~ −52		○	○					
−54 ~ ∞		○						

○ mark
= Light up
= "L" level output



DTS code pulses

Function	No. of output pulses
CH 1 (CH 9)	0
CH 2 (CH 10)	1
CH 3 (CH 11)	2
CH 4 (CH 12)	3
CH 5 (CH 13)	4
CH 6 (CH 14)	5
CH 7 (CH 15)	6
CH 8 (CH 16)	7
FM	13
AM	15

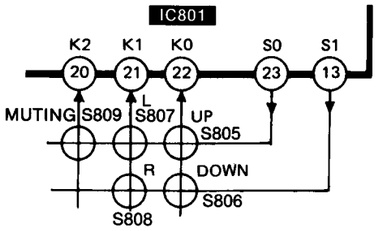
No.	Selector	D_A	D_B	D_C	D_D
1	—	L	L	L	H
2	PHONO	L	L	H	L
3	TUNER	L	L	H	H
4	CD/AUX	L	H	L	L
5	TAPE	L	H	H	L
6	TURNTABLE START	H	L	L	L
7	TURNTABLE STOP	H	L	L	H
8	VCR2	L	H	H	H
9	VCR1	L	H	L	H

D

Notes:

(A) Key matrix, scanning signal input/output pins and their functions ("H" level scan)

OUT \ IN	K0 No.22	K1 No.21	K2 No.20
S0 No.23	Volume UP	Balance L	Muting
S1 No.13	Volume DOWN	Balance R	——



(B) Volume UP/DOWN

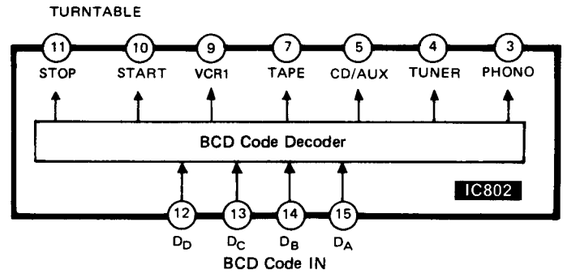
1. Push the key once, and the volume will turn up (or down) by 2dB each steps.
2. Keep the key depressed for more than 250msec, and the volume will turn up (or down) all the way automatically.
3. An "L" level output is given at LED1 ~ LED7 pins according to the volume attenuation.

(C) Balance LEFT/RIGHT

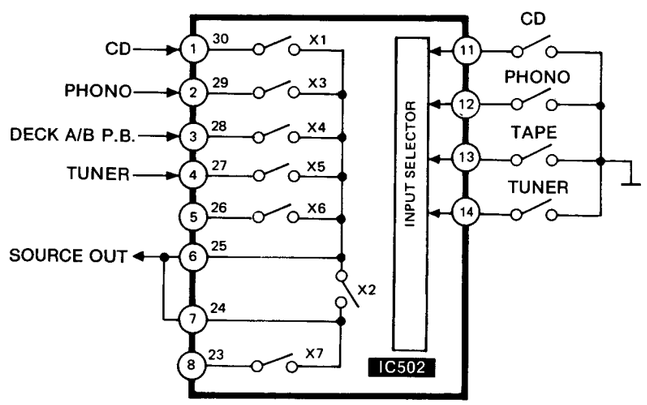
1. Push the key once, and the balance will shift to the left (or right) channel by 2dB. At the same time, the "Volume/Balance" indicator (LED1 ~ LED7) is switched to the Balance position. (The Balance indication goes on for about 4 ~ 6 seconds after the Balance key is released.)
2. Keep the key depressed for more than 500msec, the automatic shift mode will be invited.

•IC802 (DN74LS145) BCD Decoder

The microcomputer (IC801) codes are fed via its No. ㉓ ~ No. ㉖ pins to the IC802's No. ⑫ ~ No. ⑮ pins. An "L" level output is given according to the selector positions; now the input selector IC (IC502) receives the output as a switching signal. (For the input codes to IC802, refer to the list of codes under No. ㉓ ~ No. ㉖ pins of IC801.)



• IC502 (LC7818) input Selector



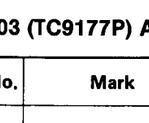
MODE \ SW	X1	X2	X3	X4	X5	X6	X7
PHONO	—	on	on	—	—	—	—
CD	on	on	—	—	—	—	—
DECK A/B	—	on	—	on	—	—	—
TUNER	—	on	—	—	on	—	—

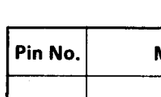
• IC503 (TC9177P) Attenuator

Pin No.	Mark	Description
1	V_{SS}	Power supply (negative).
2, 3 18, 19	CH1-Loudness 1, 2 CH2-Loudness 1, 2	Loudness terminal.
4 17	CH1-OUT 1 CH2-OUT 1	10dB attenuator output. Signal via IN is attenuated by 8 steps, 10dB each, from 0 ~ 70dB.
5 16	CH1-IN 1 CH2-IN 1	10dB attenuator input.
6 15	A-GND	AC grounding terminal.
7 14	CH1-IN 2 CH2-IN 2	2dB attenuator input.
8 13	CH1-OUT 2 CH2-OUT 2	2dB attenuator output. Signal via IN is attenuated by 5 steps, 2dB each, from 0 ~ 8dB.
9	GND	Grounding terminal.
10	CK	Clock input. Used to take in data at DATA pin.
11	DATA	Attenuation/channel select data input. 20-bits input activated by CK signal.
12	ST	Strobe input. Attenuation/channel select data from DATA and CK pins are lapped when this pin is at "H" level. Previous data remain the same while this pin does not reach "H" level.
20	V_{DD}	Power supply (positive).

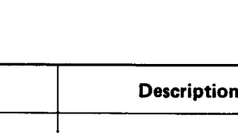
■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

AN6552F	8 pin	LC7818	30 pin
AN6558F	8 pin	LC6523C-3068	30 pin
AN7273A	18 pin	TC9177P	20 pin
DN74LS145	16 pin		

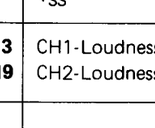




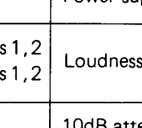
UPD1718G514 | 52 pin



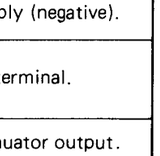
SVI3100A



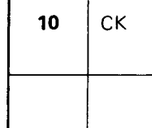
AN7420



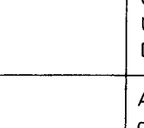
MN6634



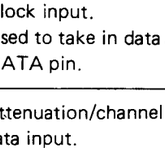
AN7812



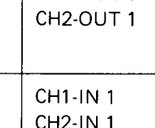
2SD1450Q, 2SC2787L, 2SC2785F, 2SC2786M, 2SC3313C



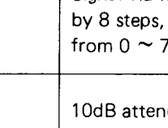
2SA684, SC1845, 2SD592, 2SD1512R



DTC114ESTP
DTC114YSTP
DTA114ESTP



2SK301



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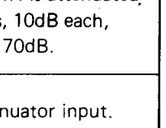
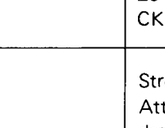
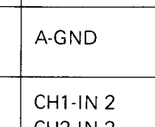


GP15GLF, 1SR35200, MA165, MA29WA



MA4051M, MA4056M, MA4062M, MA4120M, MA4082M, MA4030M



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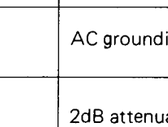
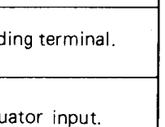


MA325G



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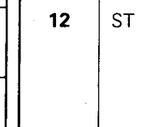


LN88RCPP

■ RESISTORS AND CAPACITORS

Notes: * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* Bracketed indications in Ref. No. columns specify the area.
Parts without these indications can be used for all areas.

Numbering System of Resistor

Example

ERD	25	F	J	102
Type	Wattage	Shape	Tolerance	Value

ERX	2	AN	J	471
Type	Wattage	Shape	Tolerance	Value $47x10^1$ (ohm)

Numbering System of Capacitor

Example

ECKD	1H	102	Z	F
Type	Voltage	Value	Tolerance	Peculiarity

ECEA	50	M	330
Type	Voltage	Peculiarity	Value ($33x10^0$ microfarad)

Resistor Type	Wattage	Tolerance
ERD : Carbon ERG : Metal Oxide ERX : Metal Film ERQ : Fuse Type Metal ERD□ L : Carbon (chip) ERO□ K : Metal Film (chip) ERC : Solid	10 : 1/8W 12 : 1/2W 25 : 1/4W 1A : 1W 18 : 1/8W S2 : 1/4W S1 : 1/2W 2F : 1/4W 50 : 1/2W 2A : 2W	J : ±5% F : ±1% G : ±2% K : ±10%

Capacitor Type	Voltage	Tolerance
ECE : Electrolytic ECCD : Ceramic ECKD : Ceramic ECQM : Polyester ECQP : Polyproylene ECG : Ceramic ECEA□□□N: Non Polar Electrolytic QCU□ : Ceramic (Chip Type) ECUX : Ceramic (Chip Type) ECF : Semiconductor EECW : Liquid electrolyte double layer capcitor	0J : 6.3V 1A : 10V 1C : 16V 1E : 25V 1H : 50V 1V : 35V 50 : 50V 05 : 50V 2H : 500V 2A : 100V 1 : 100V KC : 400V AC KC : 125VAC (UL) 1J : 63V	C : ±0.25pF J : ±5% K : ±10% Z : +80% −20% P : +100% −0% M : ±20% D : ±0.5pF G : ±2%

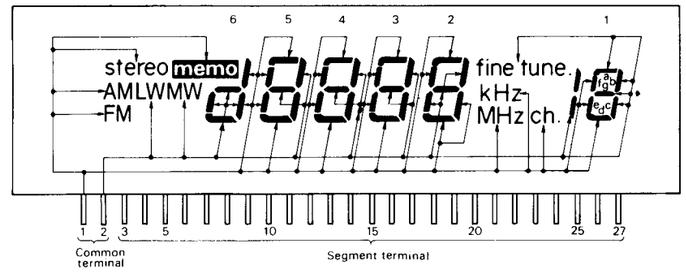
Ref. No.	Part No.	Part Code
RESISTORS		
R201	ERDS2TJ332	001 152 2357 1
R202	ERDS2TJ824	001 152 2457 8
R203	ERDS2TJ332	001 152 2357 1
R204	ERDS2TJ221	001 152 2431 8
R205	ERDS2TJ470	001 152 2442 5
R206	ERDS2TJ824	001 152 2457 8
R207	ERDS2TJ221	001 152 2431 8
R208	ERDS2TJ824	001 152 2457 8
R210	ERDS2TJ333	001 152 2358 0
R211	ERDS2TJ221	001 152 2431 8
R212	ERDS2TJ474	001 152 2443 4
R213	ERDS2TJ102	001 152 2346 4
R214	ERDS2TJ332	001 152 2357 1
R215	ERDS2TJ224	001 152 2433 6
R216	ERDS2TJ222	001 152 2353 5
R217	ERDS2TJ122	001 152 2423 8
R220	ERDS2TJ472	001 152 2362 4
R221	ERDS2TJ222	001 152 2353 5
R222	ERDS2TJ103	001 152 2347 3
R223	ERDS2TJ681	001 152 2449 8
R224	ERDS2TJ122	001 152 2423 8
R225	ERDS2TJ104	001 152 2348 2
R226	ERDS2TJ103	001 152 2347 3
R227	ERDS2TJ472	001 152 2362 4
R228	ERDS2TJ223	001 152 2432 7
R229	ERDS2TJ470	001 152 2442 5
R230	ERDS2TJ102	001 152 2346 4
R231	ERDS2TJ104	001 152 2348 2
R232	ERDS2TJ473	001 152 2363 3
R233	ERDS2TJ822	001 152 2455 0
R234	ERDS2TJ562	001 152 2445 2
R235	ERDS2TJ222	001 152 2353 5
R236	ERDS2TJ103	001 152 2347 3
R237	ERDS2TJ102	001 152 2346 4
R238, R239	ERDS2TJ103	001 152 2347 3
R240	ERDS2TJ103	001 152 2347 3
R241	ERDS2TJ104	001 152 2348 2
R242	ERDS2TJ222	001 152 2353 5
R243	ERDS2TJ681	001 152 2449 8
R244	ERDS2TJ471	001 152 2361 5
R245	ERDS2TJ822	001 152 2455 0
R246	ERDS2TJ222	001 152 2353 5
R247	ERDS2TJ102	001 152 2346 4
R248	ERDS2TJ104	001 152 2348 2
R249	ERDS2TJ224	001 152 2433 6
R250	ERDS2TJ103	001 152 2347 3
R251, R252	ERDS2TJ332	001 152 2357 1
R253, R254	ERDS2TJ104	001 152 2348 2
R255	ERDS2TJ471	001 152 2361 5
R256	ERDS2TJ102	001 152 2346 4
R257	ERDS1FJ6R8	001 152 2637 6
R258	ERDS2TJ102	001 152 2346 4
R259	ERDS2TJ221	001 152 2431 8
R260	ERD25FJ470	001 152 0309 7
R261	ERDS2TJ102	001 152 2346 4
R262	ERDS2TJ103	001 152 2347 3
R263	ERDS2TJ333	001 152 2358 0
R264	ERDS2TJ681	001 152 2449 8
R266	ERDS2TJ271	001 152 2435 4
R267, R268	ERDS2TJ103	001 152 2347 3
R269, R270	ERDS2TJ103	001 152 2347 3
R271, R272	ERDS2TJ103	001 152 2347 3
R273, R274	ERDS2TJ103	001 152 2347 3
R275	ERDS2TJ103	001 152 2347 3
R276	ERDS2TJ104	001 152 2348 2
R277	ERDS2TJ332	001 152 2357 1
R278	ERDS2TJ471	001 152 2361 5
R279	ERDS2TJ472	001 152 2362 4
R280	ERDS2TJ153	001 152 2351 7
R281	ERDS2TJ562	001 152 2445 2
R282	ERDS2TJ104	001 152 2348 2
R283	ERDS2TJ473	001 152 2363 3
R284	ERDS2TJ154	001 152 2427 4
R285	ERDS2TJ104	001 152 2348 2
R301, R302	ERDS2TJ100	001 152 2420 1
R303, R304	ERDS2TJ224	001 152 2433 6
R305, R306	ERDS2TJ121	001 152 2349 1
R307, R308	ERDS2TJ394	001 152 2441 6
R309, R310	ERDS2TJ163	001 152 2763 1
R311, R312	ERDS2TJ332	001 152 2357 1
R313, R314	ERDS2TJ472	001 152 2362 4
R315, R316	ERDS2TJ224	001 152 2433 6
R317	ERDS2TJ472	001 152 2362 4
R318, R319	ERDS2TJ103	001 152 2347 3
R320, R321	ERDS2TJ103	001 152 2347 3
R322	ERDS2TJ103	001 152 2347 3
R323, R324	ERDS2TJ224	001 152 2433 6
R325, R326	ERD25FJ100	001 152 0213 4
R327, R328	ERD25FJ101	001 152 0214 3
R329, R330	ERDS2TJ224	001 152 2433 6
R331, R332	ERDS2TJ121	001 152 2349 1
R333, R334	ERDS2TJ394	001 152 2441 6
R335, R336	ERDS2TJ163	001 152 2763 1
R337, R338	ERDS2TJ332	001 152 2357 1
R339, R340	ERDS2TJ472	001 152 2362 4
R341, R342	ERDS2TJ103	001 152 2347 3
R345, R346	ERDS2TJ103	001 152 2347 3
R347, R348	ERDS2TJ224	001 152 2433 6
R349, R350	ERDS2TJ272	001 152 2354 4
R351, R352	ERDS2TJ273	001 152 2436 3
R353, R354	ERDS2TJ333	001 152 2358 0
R355, R356	ERDS2TJ153	001 152 2351 7
R357, R358	ERDS2TJ103	001 152 2347 3
R359, R360	ERD25FJ332	001 152 0287 6
R361, R362	ERDS2TJ822	001 152 2455 0
R363, R364	ERDS2TJ272	001 152 2354 4
R367, R368	ERDS2TJ102	001 152 2346 4
R369, R370	ERDS2TJ122	001 152 2423 8
R371, R372	ERDS2TJ822	001 152 2455 0
R373, R374	ERDS2TJ101	001 152 2421 0
R375, R376	ERDS2TJ102	001 152 2346 4
R377, R378	ERDS2TJ392	001 152 2439 0
R381, R382	ERDS2TJ123	001 152 2424 7
R383, R384	ERDS2TJ102	001 152 2346 4
R385, R386	ERDS2TJ472	001 152 2362 4
R387	ERDS2TJ561	001 152 2364 2
R389	ERDS2TJ472	001 152 2362 4
R397, R398	ERDS2TJ272	001 152 2354 4
R401	ERD25FJ1R0	001 152 0208 1
R402	ERDS2TJ221	001 152 2431 8
R403	ERDS2TJ470	001 152 2442 5
R404, R405	ERDS2TJ102	001 152 2346 4
R406, R407	ERD25FJ4R7	001 152 0303 3
R408, R409	ERDS2TJ183	001 152 2429 2
R410	ERDS2TJ152	001 152 2350 8
R411	ERD2FCG100	001 152 0185 1
R412	ERDS2TJ182	001 152 2352 6

D

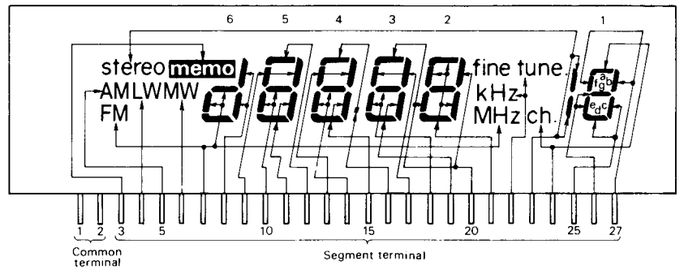
Ref. No.	Part No.	Part Code
R416, R417	ERDS2TJ103	001 152 2347 3
R418	ERDS2TJ682	001 152 2365 1
R419	ERD25FJ181	001 152 0247 4
R421	ERDS2TJ103	001 152 2347 3
R422	ERDS2TJ223	001 152 2432 7
R423	ERDS2TJ472	001 152 2362 4
R424	ERDS2TJ103	001 152 2347 3
R426	ERDS2TJ473	001 152 2363 3
R427, R428	ERDS2TJ332	001 152 2357 1
R429	ERDS2TJ224	001 152 2433 6
R430	ERDS2TJ222	001 152 2353 5
R431	ERDS2TJ221	001 152 2431 8
R432	ERDS2TJ104	001 152 2348 2
R433, R434	ERDS2TJ103	001 152 2347 3
R437	ERDS2TJ333	001 152 2358 0
R438, R439	ERDS2TJ103	001 152 2347 3
R440, R441	ERDS2TJ222	001 152 2353 5
R442, R443	ERDS2TJ103	001 152 2347 3
R444	ERDS2TJ103	001 152 2347 3
R501, R502	ERDS2TJ223	001 152 2432 7
R503, R504	ERDS2TJ103	001 152 2347 3
R505, R506	ERDS2TJ391	001 152 2360 6
R507, R508	ERDS2TJ224	001 152 2433 6
R509, R510	ERDS2TJ563	001 152 2446 1
R511, R512	ERDS2TJ271	001 152 2435 4
R513, R514	ERDS2TJ680	001 152 2448 9
R515, R516	ERDS2TJ154	001 152 2427 4
R517, R518	ERDS2TJ123	001 152 2424 7
R521, R522	ERDS2TJ103	001 152 2347 3
R523, R524	ERDS2TJ822	001 152 2455 0
R529, R530	ERDS2TJ102	001 152 2346 4
R531	ERDS2TJ103	001 152 2347 3
R532, R533	ERDS2TJ224	001 152 2433 6
R534	ERDS2TJ103	001 152 2347 3
R535	ERDS2TJ223	001 152 2432 7
R537, R538	ERDS2TJ224	001 152 2433 6
R539	ERDS2TJ103	001 152 2347 3
R540	ERDS2TJ332	001 152 2357 1
R543, R544	ERDS2TJ104	001 152 2348 2
R547, R548	ERDS2TJ822	001 152 2455 0
R549, R550	ERDS2TJ102	001 152 2346 4
R551, R552	ERDS2TJ224	001 152 2433 6
R553, R554	ERDS2TJ472	001 152 2362 4
R555, R556	ERDS2TJ103	001 152 2347 3
R557, R558	ERDS2TJ102	001 152 2346 4
R559, R560	ERDS2TJ332	001 152 2357 1
R561, R562	ERDS2TJ471	001 152 2361 5
R563, R564	ERDS2TJ104	001 152 2348 2
R565	ERDS2TJ223	001 152 2432 7
R566	ERDS2TJ102	001 152 2346 4
R567	ERDS2TJ154	001 152 2427 4
R568	ERDS2TJ823	001 152 2456 9
R569	ERDS2TJ102	001 152 2346 4
R570	ERDS2TJ223	001 152 2432 7
R571, R572	ERDS2TJ102	001 152 2346 4
R573, R574	ERDS2TJ224	001 152 2433 6
R575, R576	ERDS2TJ224	001 152 2433 6
R577, R578	ERDS2TJ223	001 152 2432 7
R579, R580	ERDS2TJ392	001 152 2439 0
R581, R582	ERDS2TJ223	001 152 2432 7
R583, R584	ERDS2TJ222	001 152 2353 5
R585, R586	ERDS2TJ102	001 152 2346 4
R587, R588	ERDS2TJ224	001 152 2433 6
R603, R604	ERDS2TJ102	001 152 2346 4
R605, R606	ERDS2TJ393	001 152 2440 7
R607, R608	ERDS2TJ152	001 152 2350 8
R609, R610	ERDS2TJ393	001 152 2440 7
R611, R612	ERDS1FJ100	001 152 2612 5
R613	ERDS2TJ154	001 152 2427 4
R615, R616	ERDS1FJ221	001 152 2513 7
R621	ERDS2TJ154	001 152 2427 4
R622	ERDS2TJ103	001 152 2347 3
R701	ERD2FCG121	001 152 0187 9
R702	ERDS2TJ332	001 152 2357 1
R703	ERDS2TJ102	001 152 2346 4
R704	ERDS1FJ331	001 152 2514 6
R705	ERDS1FJ1R0	001 152 2754 2
R706	ERDS2TJ332	001 152 2357 1
R801, R802	ERDS2TJ391	001 152 2360 6
R803	ERDS2TJ102	001 152 2346 4
R805	ERDS2TJ333	001 152 2358 0
R806	ERDS2TJ473	001 152 2363 3
R807	ERDS2TJ222	001 152 2353 5
R808	ERDS2TJ103	001 152 2347 3
R809, R810	ERDS2TJ182	001 152 2352 6
R811, R812	ERDS2TJ182	001 152 2352 6
R813, R814	ERDS2TJ122	001 152 2423 8
R815, R816	ERDS2TJ122	001 152 2423 8
R817	ERDS2TJ563	001 152 2446 1
R818	ERDS2TJ103	001 152 2347 3
R819, R820	ERDS2TJ223	001 152 2432 7
R821	ERDS2TJ392	001 152 2439 0
R826	ERDS2TJ272	001 152 2354 4
R827	ERD2FCG100	001 152 0185 1
R828	ERDS2TJ102	001 152 2346 4
R829	ERDS2TJ564	001 152 2447 0
R830	ERDS2TJ471	001 152 2361 5
CAPACITORS		
C201	ECCD1H680K	001 103 0682 4
C202	ECCD1H560K	001 103 0660 0
C203	ECCD1H100KC	001 103 0321 6
C204, C205	ECKD1H102PF	001 103 1435 3
C206	ECKD1H102PF	001 103 1435 3
C207	ECFTD102KXL	001 108 0371 1
C208	ECCD1H1R5CC	001 103 0302 9
C209	ECCD1H100KC	001 103 0321 6
C210	ECKD1H181KB	001 103 1473 7
C211, C212	ECKD1H103ZF5	
C213, C214	ECKD1H103ZF5	
C215	ECFTD103KXL	001 108 0341 7
C216	ECCD1H060CC	001 103 0264 8
C217	ECKD1H102PF	001 103 1435 3
C218	ECCD1H010CC	001 103 0215 7
C219	ECCD1H080CC	001 103 0284 4
C220	ECCD1H220KC	001 103 0494 6
C221	ECCD1H060CC	001 103 0264 8
C222	ECCD1H050CC	001 103 0251 3
C223 ⚠	ECKD1H223PF	001 103 1510 9
C224	ECKD1H102PF	001 103 1435 3
C225	ECCD1H030CC	001 103 0230 8
C226	ECEA1HU010	001 120 2842 1
C230	ECFTD473KXL	001 108 0361 3
C231	ECCD1H100KC	001 103 0321 6
C232	ECCD1H180KC	001 103 0448 2
C233	ECQP1471JZ	001 106 1107 1
C234	ECQP1391JZ	001 106 1101 7
C235	ECKD1H103ZF5	
C236	ECFTD103KXL	001 108 0341 7
C237 ⚠	ECKD1H223PF	001 103 1510 9
C238	ECEA50M1	001 120 1111 3
C239, C240	ECKD1H103ZF5	
C241	ECCD1H060CC	001 103 0264 8
C242	ECCD1H470K	001 103 0627 1
C243	ECEA0JU101	001 120 2829 8
C244	ECEA1HU3R3	001 120 3254 1
C245	ECFTD223KXL	001 108 0342 6
C246	ECFTD183KXL	001 108 0358 8
C247	ECFTD223KXL	001 108 0342 6
C248 ⚠	ECKD1H223PF	001 103 1510 9
C249	ECEA1HUR47	001 120 3249 8
C250	ECKD1H103ZF5	
C251	ECCD1H100KC	001 103 0321 6
C252	ECEA1CU100	001 120 2905 3
C253, C254	ECKD1H103ZF5	
C255, C256	ECEA1VU4R7	001 120 3275 6
C257	ECEA1HU010	001 120 2842 1
C258	ECEA0JS221	001 120 2925 9
C259	ECQP1102JZ	001 106 1069 0
C260	ECEA1HU3R3	001 120 3254 1
C261, C262	ECFTD153KXL	001 108 0356 0
C263, C264	ECEA1VU4R7	001 120 3275 6
C265	ECEA1CU100	001 120 2905 3
C266	ECEA1HUR47	001 120 3249 8
C267	ECCD1H150KC	001 103 0410 6
C268	ECKD1H102PF	001 103 1435 3
C269	ECEA0JU332	001 120 4671 4
C270	ECEA0JS331	001 120 2975 9
C271	ECCD1H470K	001 103 0627 1
C272	ECCD1H100KC	001 103 0321 6
C273	ECKD1H101KB	001 103 1412 0
C274	ECFTD104KXL	001 108 0793 3
C275	ECEA1HU3R3	001 120 3254 1
C276	ECFTD473KXL	001 108 0361 3
C277	ECKD1H103ZF5	
C278	ECKD1H102PF	001 103 1435 3
C279	ECKF1H102ZF	
C280	ECFTD103KXL	001 108 0341 7
C301, C302	ECKD1H561KB	001 103 1576 1
C303, C304	ECEA0JU470	001 120 3125 9
C305, C306	ECKD1H331KB	001 103 1523 4
C307, C308	ECQB1H822JZ	001 106 3383 5
C309, C310	ECEA1HU010	001 120 2842 1
C311, C312	ECQB1H153JZ	001 106 2817 4
C313, C314	ECKD1H103ZF5	
C315, C316	ECCD1H020CC	001 103 0221 9
C317, C318	ECEA1HU010	001 120 2842 1
C319, C320	ECKD1H103ZF5	
C321, C322	ECKD1H561KB	001 103 1576 1
C323, C324	ECEA0JU470	001 120 3125 9
C325, C326	ECQB1H822JZ	001 106 3383 5
C327, C328	ECKD1H103ZF5	
C329, C330	ECEA1HU010	001 120 2842 1
C331, C332	ECQB1H153JZ	001 106 2817 4
C333, C334	ECEA1HU010	001 120 2842 1
C335, C336	ECEA1HUR47	001 120 3249 8
C337, C338	ECKD1H103ZF5	
C339, C340	ECQB1H273JZ	001 106 3393 3
C341, C342	ECQB1H103JZ	001 106 3225 8
C343, C344	ECCD1H560K	001 103 0660 0
C346	ECEA0JU470	001 120 3125 9
C347, C348	ECKD1H331KB	001 103 1523 4
C353	ECEA0JU470	001 120 3125 9
C354, C355	ECKD1H681K	001 103 1580 5
C401	ECQP1822FZ	001 106 1116 0
C402	ECQP1122JZ	001 106 1072 5
C403	ECQP1222JZ	001 106 2114 8
C404, C405	ECQV1H104JZ	001 106 2571 7
C406	ECQB1H153JZ	001 106 2817 4
C407	ECQB1H682JZ	001 106 3382 6
C408, C409	ECQB1H332JZ	001 106 3316 6
C410	ECEA1HU010	001 120 2842 1
C412	ECEA1CU470	001 120 2835 0
C413	ECEA1HUR47	001 120 3249 8
C414, C415	ECEA1CU470	001 120 2835 0
C416	ECEA1CU470	001 120 2835 0
C417	ECEA0JU470	001 120 3125 9
C420	ECEA1CU101	001 120 2926 8
C501, C502	ECEA1HU3R3	001 120 3254 1
C503, C504	ECKD1H101KB	001 103 1412 0
C505, C506	ECKD1H471KB5	
C507, C508	ECEA0JU330	001 120 3162 4
C509, C510	ECFTD223KXL	001 108 0342 6
C511, C512	ECFTD682KXL	001 108 0363 1
C513, C514	ECEA1HU010	001 120 2842 1
C515, C516	ECKD1H103ZF5	
C517	ECEA1CU101	001 120 2926 8
C518	ECFTD473KXL	001 108 0361 3
C519	ECEA1CU100	001 120 2905 3
C521, C522	ECEA1HU010	001 120 2842 1
C523, C524	ECEA1CU470	001 120 2835 0
C526	ECKD1H103ZF5	
C527, C528	ECFTD473KXL	001 108 0361 3
C529	ECKD1H103ZF5	
C530	ECEA1VU4R7	001 120 3275 6
C531	ECEA1HN0101S	001 120 0354 0
C532	ECKD1H103ZF5	
C533, C534	ECEA1HU010	001 120 2842 1
C535, C536	ECKD1H331KB	001 103 1523 4
C537, C538	ECEA1HU010	001 120 2842 1
C539, C540	ECKD1H103ZF5	
C541, C542	ECEA1HU3R3	001 120 3254 1
C543, C544	ECKD1H103ZF5	
C545, C546	ECKD1H101KB	001 103 1412 0
C547, C548	ECKD1H101KB	001 103 1412 0
C549, C550	ECEA1HU010	001 120 2842 1
C551, C552	ECEA1HU010	001 120 2842 1
C553, C554	ECFTD183KXL	001 108 0358 8
C555, C556	ECFTD104KXL	001 108 0793 3
C557, C558	ECFTD332KXL	001 108 0344 4
C559, C560	ECFTD223KXL	001 108 0342 6
C561	ECEA1CU101	001 120 2926 8
C601, C602	ECEA1HU3R3	001 120 3254 1
C603, C604	ECKD1H821KB	001 103 1596 7
C605, C606	ECFTD102KXL	001 108 0371 1
C607, C608	ECEA1CU100	001 120 2905 3
C609, C610	ECCD1H150KC	001 103 0410 6
C611, C612	ECFTD473KXL	001 108 0361 3
C613	ECEA1HS330	001 120 0383 5
C614, C615	ECFTD473KXL	001 108 0361 3
C616	ECFTD473KXL	001 108 0361 3
C701	ECQM1104KZW	001 106 2113 9
C702, C703	ECEA1VU332	001 120 2945 5
C705, C706	ECEA1CU101	001 120 2926 8
C707, C708	ECKD1H103ZF5	
C709, C710	ECKD1H103ZF5	
C711	ECEA25V2200	001 120 3126 8
C712	ECEA1CU101	001 120 2926 8
C713	ECEA1CU471	001 120 3202 3
C714	ECKWNS103ZVS	001 103 9317 6
C801, C802	ECKD1H103ZF5	
C803	ECKD1H181KB	001 103 1473 7
C804	ECCD1H820K	001 103 0703 6
C807	ECEA1CU101	001 120 2926 8
C810	ECEA1HKR22	001 120 0336 2
C811	ECCD1H680K	001 103 0682 4
C814	ECEA1HK010	001 120 0341 5
C815	ECKD1H101KB	001 103 1412 0
C816, C820	ECKD1H103ZF5	
C821	ECEA1CU100	001 120 2905 3
C822	ECFTD472KXL	001 108 0746 0

■ DESCRIPTION OF LCD PANEL

• **COMMON**



• **SEGMENT**

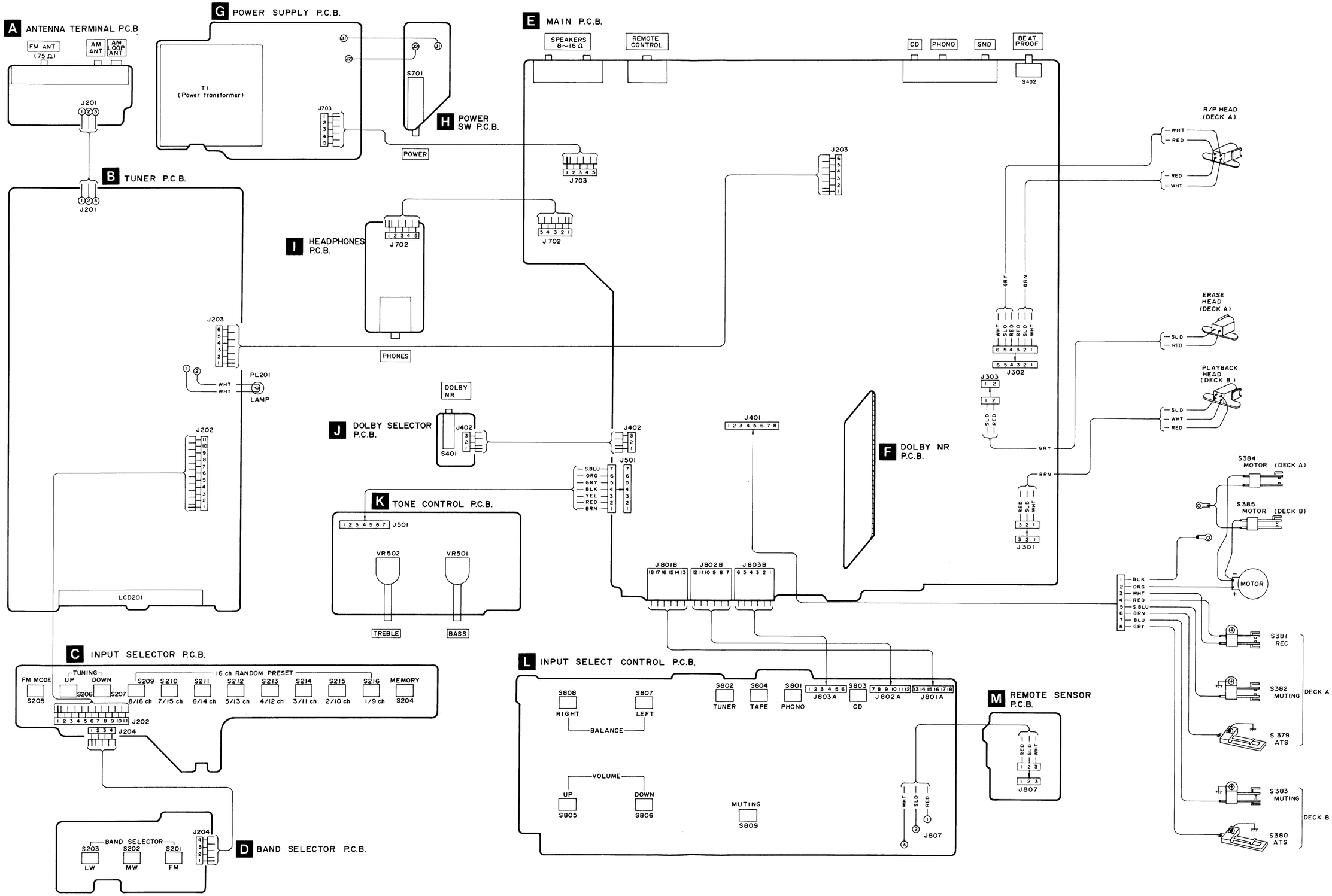


No.	1	2	3	4	5	6	7	/8	9	10	11	12	13	14	15
COM1	COM1	—	MEMO	—	AM	—	FM, MHz	6b	5f	5e	5d	5a	4f	4e	4d
COM2	—	COM2	—	LW	—	MW	6deg	6c	5b	5g	5c	—	4b	4g	4c

No.	16	17	18	19	20	21	22	23	24	25	26	27
COM1	4a	3f	3e	3d	3a	2acdf	kHz	stereo	ch	1d	1e	1f
COM2	▰	3b	3g	3c	2be	2g	fine tune	/	1a	1c	1g	1b

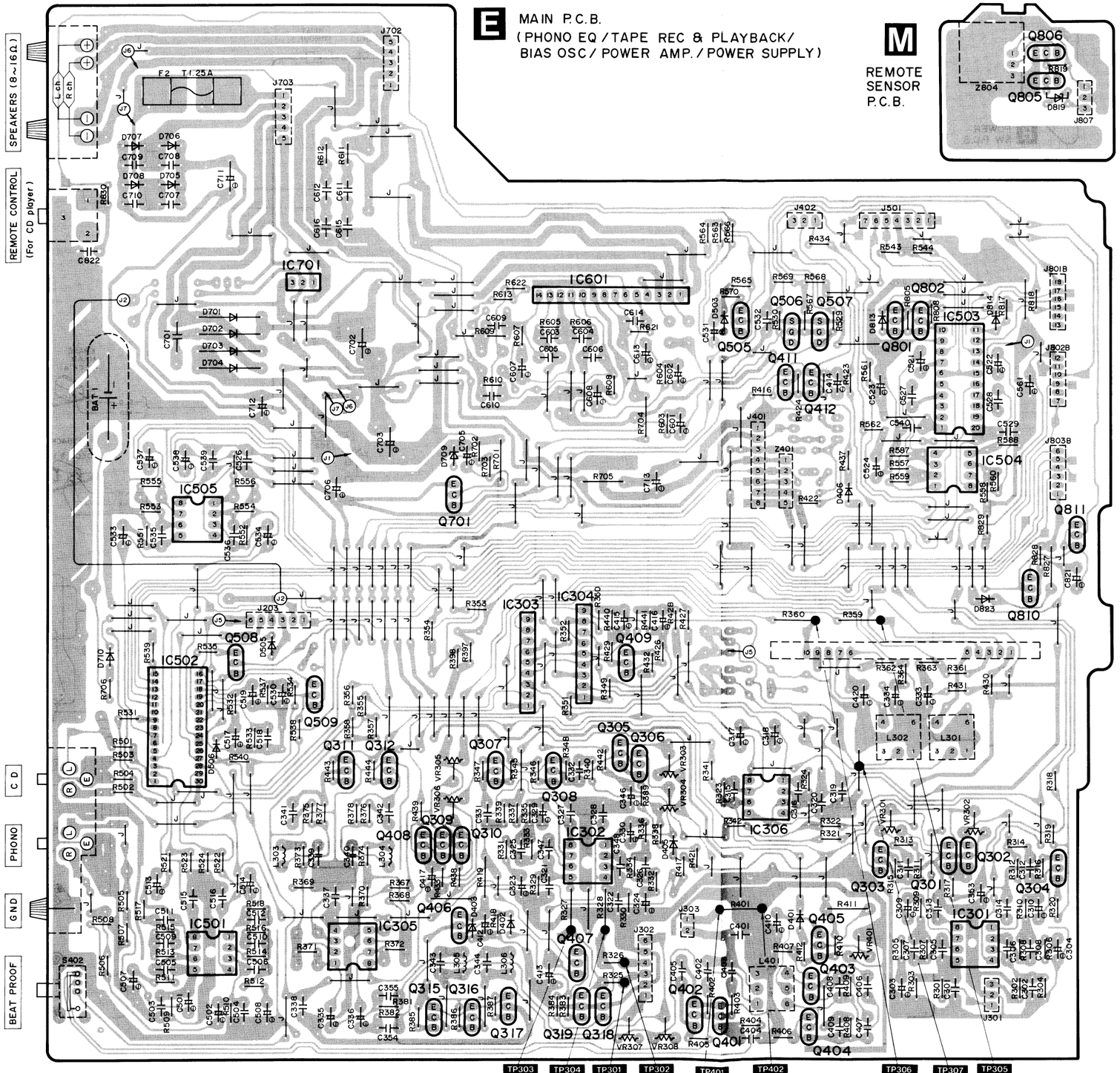
D

■ WIRING CONNECTION DIAGRAM



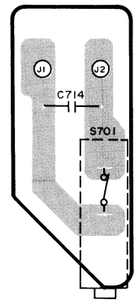
■ PRINTED CIRCUIT BOARDS

E MAIN P.C.B.
(PHONO EQ / TAPE REC & PLAYBACK/
BIAS OSC / POWER AMP. / POWER SUPPLY)

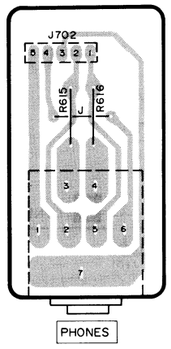


M REMOTE SENSOR P.C.B.

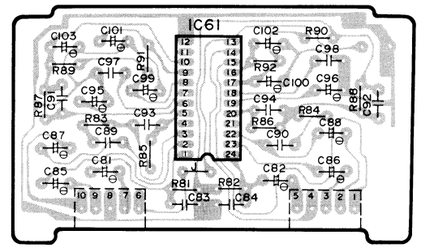
H POWER SWITCH P.C.B.



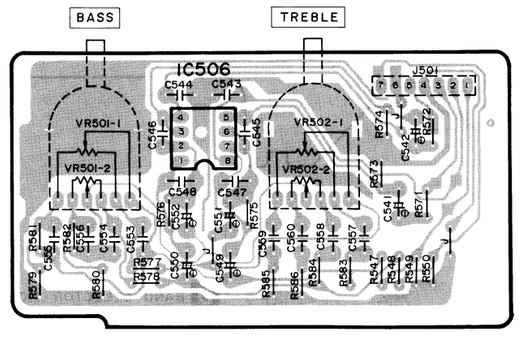
I HEADPHONES JACK P.C.B.



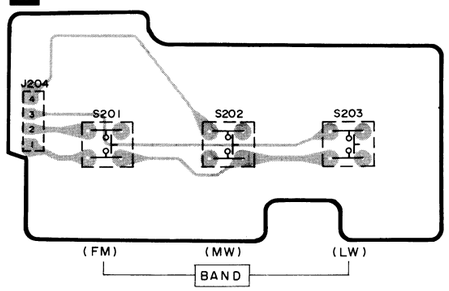
F DOLBY NR P.C.B.



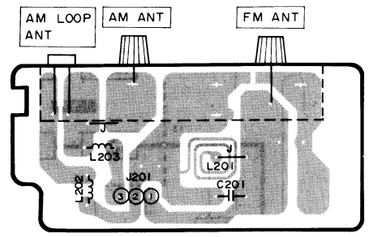
K TONE CONTROL P.C.B.



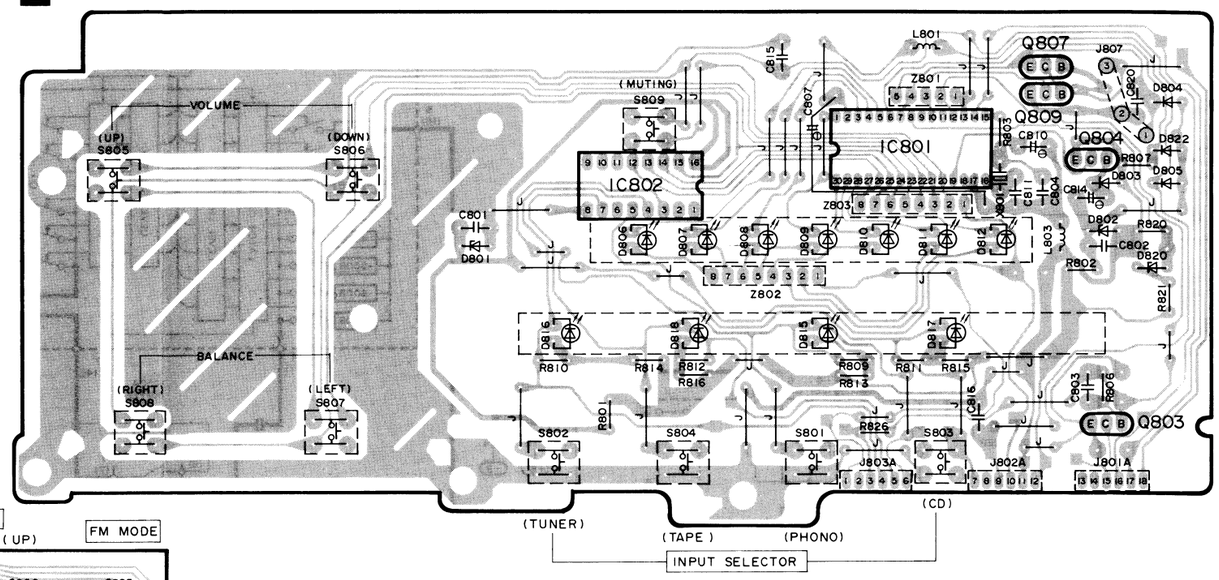
D BAND SELECTOR P.C.B.



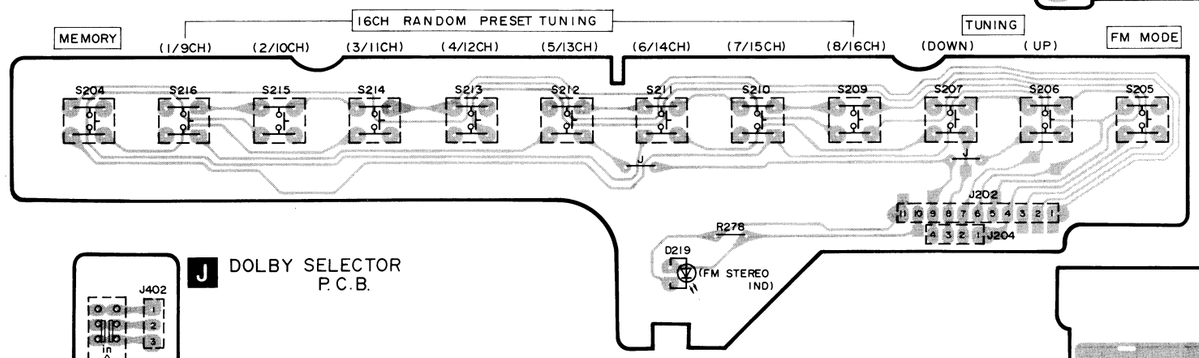
A ANTENNA TERMINAL P.C.B.



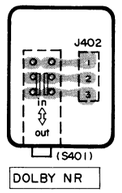
L INPUT SELECT CONTROL P.C.B.



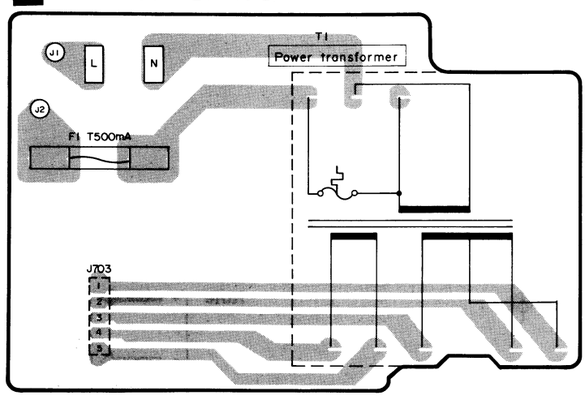
C INPUT SELECTOR P.C.B.



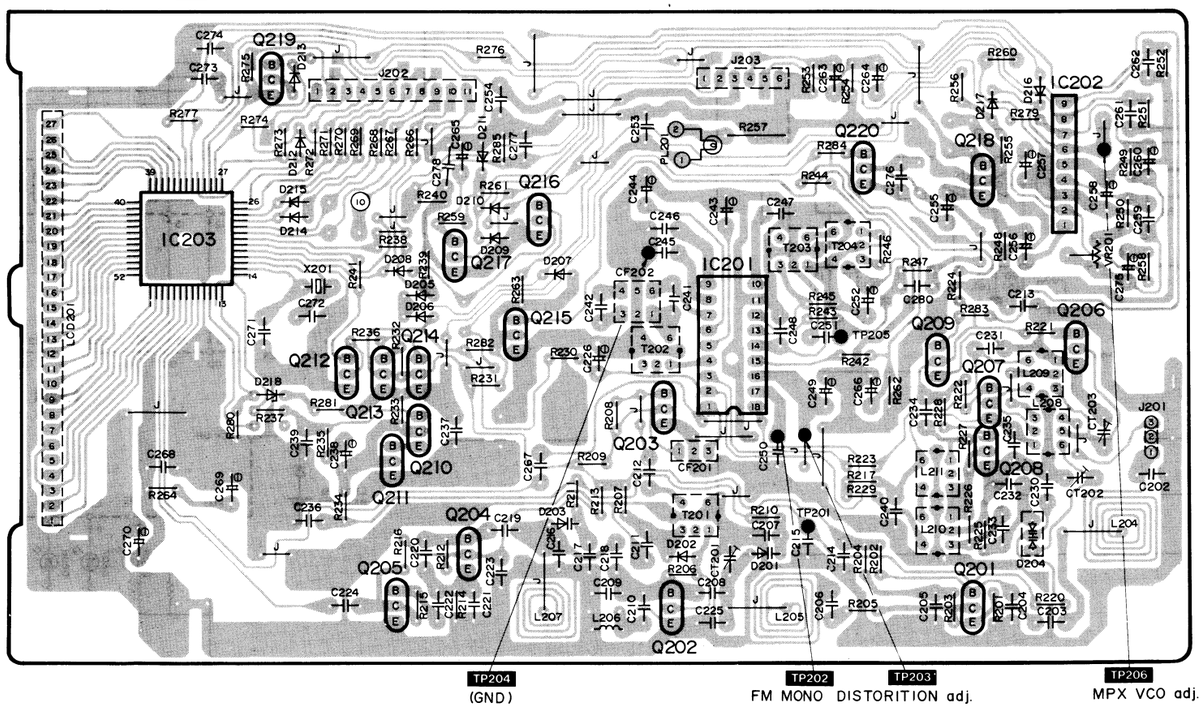
J DOLBY SELECTOR P.C.B.



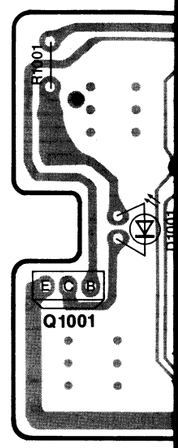
G POWER SUPPLY P.C.B.



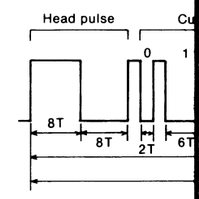
B TUNER P.C.B.



• Remote-Contr

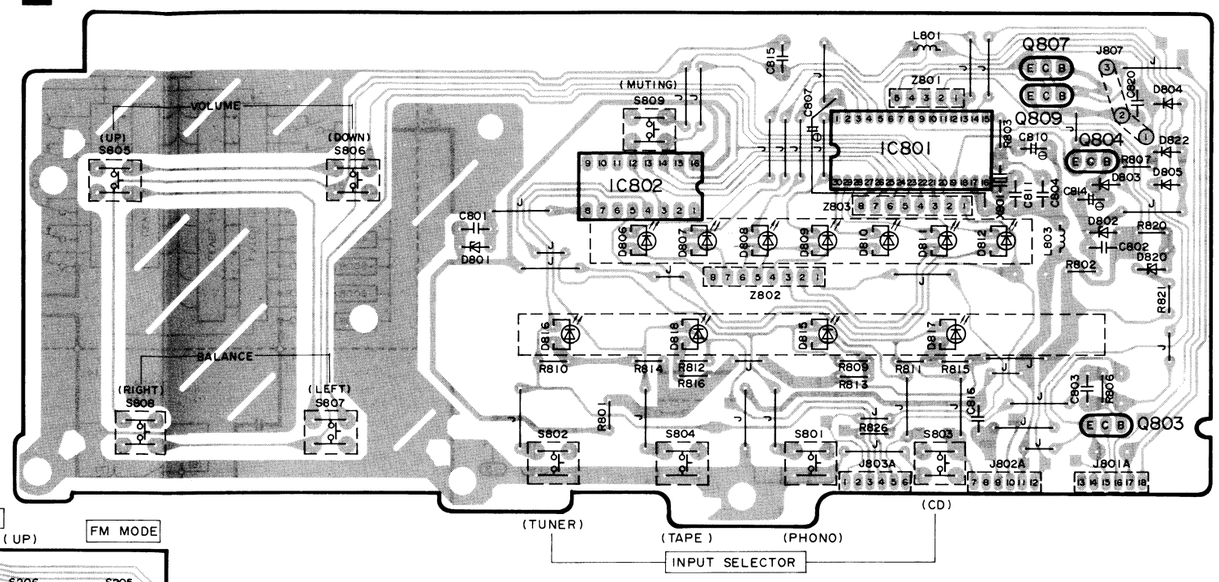


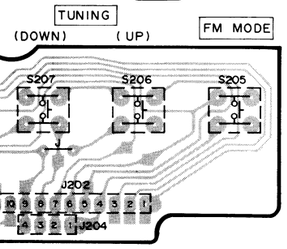
• KEY NUMBER



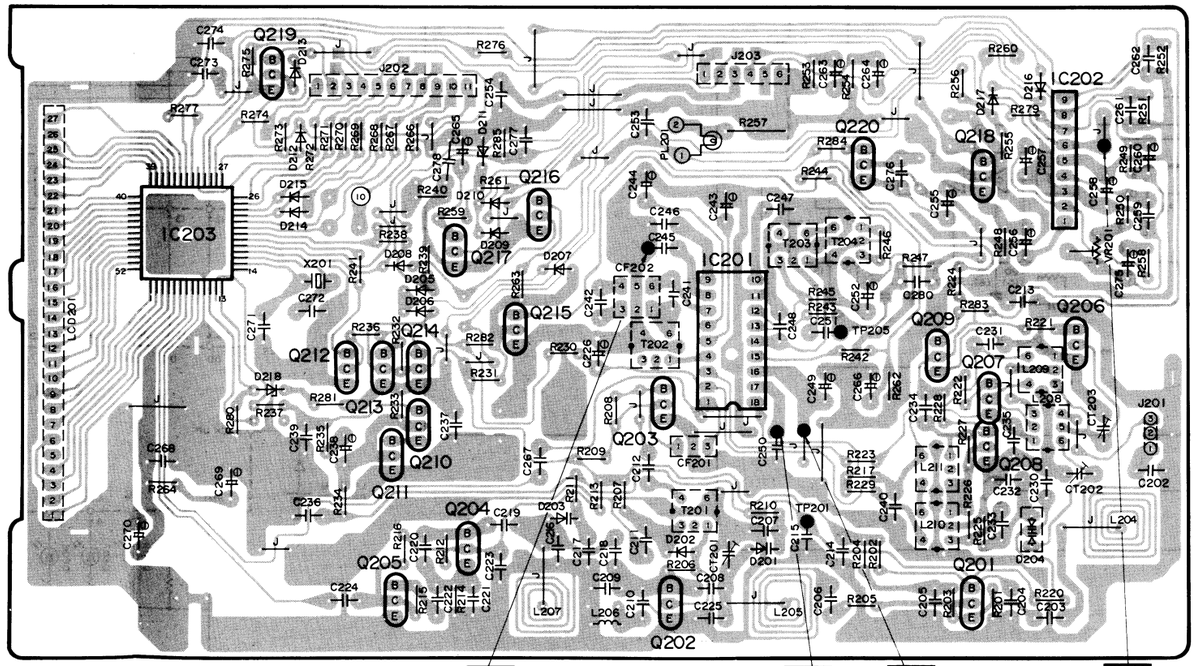
Key No.	Fur
0	AUDIO MU
1	VOLUME D
2	VOLUME U
4	CH1 (CH9)
5	CH2 (CH10)
6	CH3 (CH11)
7	CH4 (CH12)
11	CH5 (CH13)
12	CH6 (CH14)

L INPUT SELECT CONTROL P.C.B.

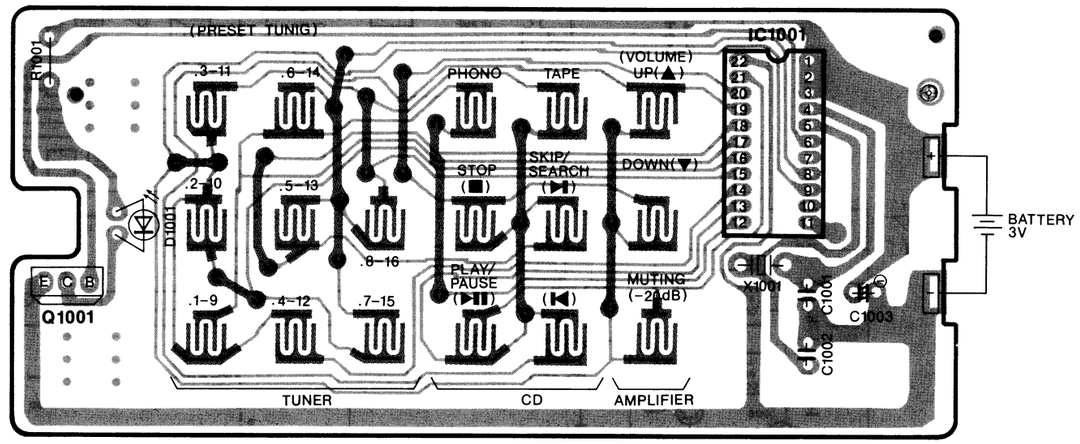




B TUNER P.C.B.

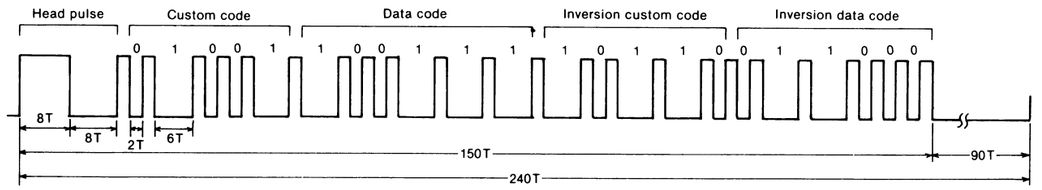


• **Remote-Control Transmitter**



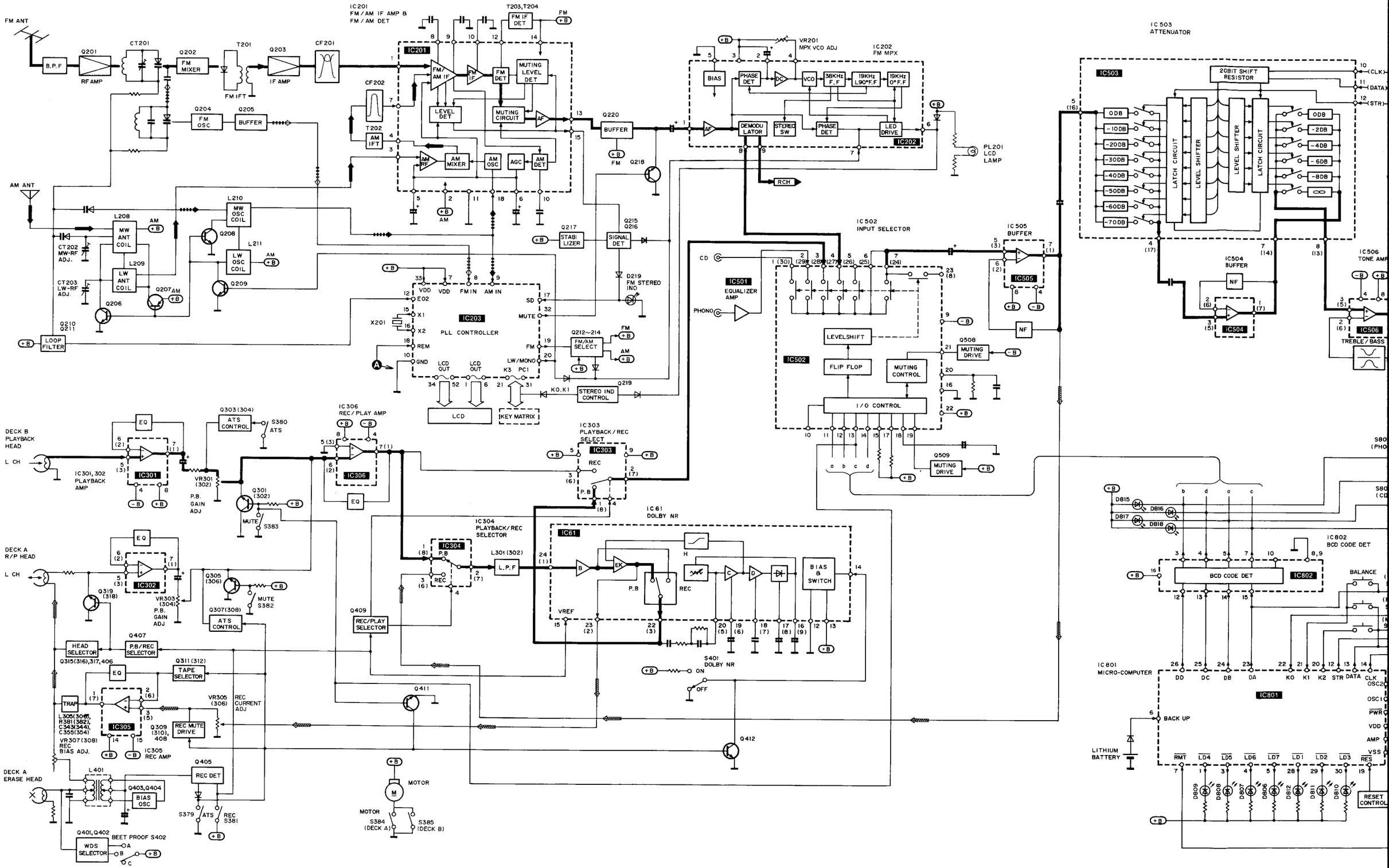
• **KEY NUMBER DESCRIPTION AND DATA CODE (Example key No. 0)**

fosc=420kHz
fcar=fosc/12
fclk=fcar/16
T=1/fclk



Key No.	Function	Custom code	Data code	Key No.	Function	Custom code	Data code
0	AUDIO MUTING (−20dB)	01001	100111	13	CH7 (CH15)	01001	010110
1	VOLUME DOWN ▼	01001	100101	14	CH8 (CH16)	01001	010111
2	VOLUME UP ▲	01001	100100	20	PHONO	01001	001100
4	CH1 (CH9)	01001	010000	24	CD PLAY ▶/▮▮ PAUSE	01100	001010
5	CH2 (CH10)	01001	010001	25	CD STOP ■	01100	000000
6	CH3 (CH11)	01001	010010	26	CD SKIP/SEARCH ◀◀	01100	000010
7	CH4 (CH12)	01001	010011	27	CD SKIP/SEARCH ▶▶	01100	000011
11	CH5 (CH13)	01001	010100	30	TAPE	01001	001010
12	CH6 (CH14)	01001	010101				

■ BLOCK DIAGRAM



T203,T204
FM IF DET
FM
MUTING LEVEL DET
FM DET
MUTING CIRCUIT
AF
Q220
BUFFER
AM OSC
AGC
AM DET
Q218
VR201
MPX VCO ADJ
IC202
FM MPX
BIAS
PHASE DET
DC
VCO
38KHz F.F
19KHz L90°F.F
19KHz 0°F.F
DEMODU LATOR
STEREO SW
PHASE DET
LED DRIVE
IC202
PL201
LCD LAMP
RCH
IC502
INPUT SELECTOR
IC505
BUFFER
CD
PHONO
IC501
EQUALIZER AMP
LEVELSHIFT
FLIP FLOP
MUTING CONTROL
I/O CONTROL
IC502
Q508
MUTING DRIVE
Q509
MUTING DRIVE
NF
Q217
STABI LIZER
Q215
Q216
SIGNAL DET
D219
FM STEREO IND.
SD
MUTE
IC203
ONTROLLER
FM
LW/MONO
Q212~214
FM/AM SELECT
FM
AM
LCD OUT
K3
PC1
K0,K1
STEREO IND CONTROL
Q219
KEY MATRIX
IC303
PLAYBACK/REC SELECT
IC303
REC
P.B
IC304
PLAYBACK/REC SELECTOR
L301 (302)
L.P.F
IC61
DOLBY NR
IC61
H
EK
B
C
D
P.B
REC
BIAS & SWITCH
VREF
S401
DOLBY NR
ON
OFF
Q412
IC503
ATTENUATOR
20BIT SHIFT RESISTOR
0DB
-10DB
-20DB
-30DB
-40DB
-50DB
-60DB
-70DB
LATCH CIRCUIT
LEVEL SHIFTER
LEVEL SHIFTER
LATCH CIRCUIT
0DB
-2DB
-4DB
-6DB
-8DB
(CLK) a
(DATA) b
(STR) c
IC504
BUFFER
NF
IC504
IC506
TONE AMP
IC506
TREBLE/BASS
RCH
IC601
POWER AMP
INPUT CIRCUIT
POWER AMP
IC601
INPUT CIRCUIT
POWER AMP
HEADPHONES
LCH
SPEAKERS
RCH
MUTING DRIVE
Q506, 507
PROTEC TOR
Q505
T1
F1
S701
AC IN
Q701
REGULA TOR
IC701, Q810, 811
REGULA TOR
F2
S801
(PHONO)
S802
(TUNER)
S803
(CD)
S804
(TAPE)
D815
D816
D817
D818
IC802
BCD CODE DET
IC802
BALANCE
(LEFT)
S807
(RIGHT)
S808
VOLUME
(UP)
S805
(DOWN)
S806
(MUTE)
S809
DATA DRIVE
Q801, 802
IC801
MICRO-COMPUTER
DD
DC
DB
DA
KO
K1
K2
STR
DATA
CLK
IC801
X801
OSC2
OSC1
PWR
VDD
AMP
VSS
RES
BACK UP
LITHIUM BATTERY
RMT
LD4
LD5
LD6
LD7
LD1
LD2
LD3
D809
D808
D807
D806
D812
D811
D810
RESET CONTROL
Q804
REMOTE CONTROL
Q805~807,809
Z804
REMOTE SENSOR
CD REMOTE CONTROL

Note
- FM/TAPE PLAY BACK SIGNAL
- FM OSC
- AM SIGNAL
- AM OSC
- REC SIGNAL

■ REPLACEMENT PARTS LIST

Notes: * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* Bracketed indications in Ref. No. columns specify the area.
Parts without these indications can be used for all areas.

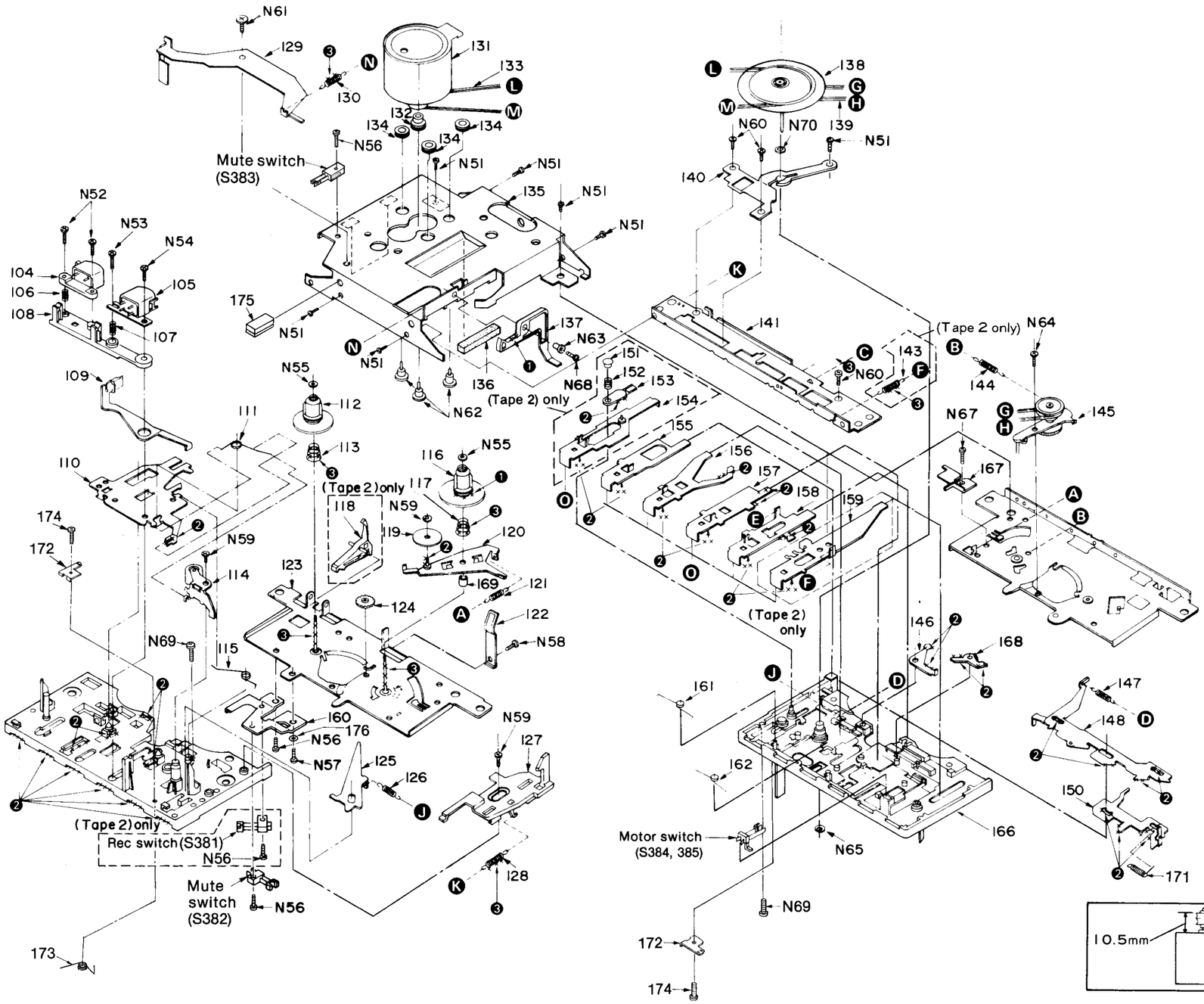
Ref. No.	Part No.	Part Code	Description
INTEGRATED CIRCUITS			
IC201	AN7273A	001 060 4214 8	I.C. FM IF DET. & AM CON.
IC202	AN7420	001 060 4196 3	I.C. MPX
IC203	UPD1718G514	001 061 1045 4	I.C. PLL CONTROLLER
IC301, IC302	AN6558F	001 060 4009 1	I.C. OPERATION AMP.
IC303, IC304	MN6634	001 061 0884 7	I.C. SWITCH
IC305, IC306	AN6552F	001 060 0274 2	I.C. OPERATION AMP.
IC501	AN6558F	001 060 4009 1	I.C. OPERATION AMP.
IC502	LC7818	001 060 8407 5	I.C. INPUT SELECTOR
IC503	TC9177P	001 061 0839 2	I.C. VOLUME CONTROL
IC504, IC505	AN6552F	001 060 0274 2	I.C. OPERATION AMP.
IC506	AN6552F	001 060 0274 2	I.C. OPERATION AMP.
IC601	SVI3100A	001 061 4893 0	I.C. POWER AMP.
IC701	AN7812	001 060 3756 7	I.C. REGULATOR
IC801	LC6523C-3068	001 061 1067 8	I.C. MICRO COMPUTER
IC802	DN74LS145	001 060 4587 2	I.C. BCB CODE DET.
TRANSISTORS			
Q201	2SC2787L	001 030 2508 3	TRANSISTOR
Q202	2SC2786M	001 030 5078 2	TRANSISTOR
Q203	2SC3313CTA	001 030 6020 6	TRANSISTOR
Q204, Q205	2SC2787L	001 030 2508 3	TRANSISTOR
Q206	2SC2785F	001 030 5076 4	TRANSISTOR
Q207	2SA1175FE	001 030 5075 5	TRANSISTOR
Q208, Q209	2SC2785F	001 030 5076 4	TRANSISTOR
Q210, Q211	2SC2785F	001 030 5076 4	TRANSISTOR
Q212	2SC2785F	001 030 5076 4	TRANSISTOR
Q213, Q214	2SA1175FE	001 030 5075 5	TRANSISTOR
Q215	2SC2785F	001 030 5076 4	TRANSISTOR
Q216	2SA1175FE	001 030 5075 5	TRANSISTOR
Q217, Q218	2SC2785F	001 030 5076 4	TRANSISTOR
Q219	2SA1175FE	001 030 5075 5	TRANSISTOR
Q220, Q301	2SC2785F	001 030 5076 4	TRANSISTOR
Q302, Q303	2SC2785F	001 030 5076 4	TRANSISTOR
Q304	2SC2785F	001 030 5076 4	TRANSISTOR
Q305, Q306	2SD1450R	001 030 4366 1	TRANSISTOR
Q307, Q308	2SC2785F	001 030 5076 4	TRANSISTOR
Q309, Q310	2SC2785F	001 030 5076 4	TRANSISTOR
Q311, Q312	2SC2785F	001 030 5076 4	TRANSISTOR
Q315, Q316	2SC1845E	001 030 1129 4	TRANSISTOR
Q317	2SC1845E	001 030 1129 4	TRANSISTOR
Q318, Q319	2SC2785F	001 030 5076 4	TRANSISTOR
Q401, Q402	2SD1512R	001 030 5015 7	TRANSISTOR
Q403, Q404	2SD592ANCQ	001 030 1752 7	TRANSISTOR
Q405	2SD592ANCQ	001 030 1752 7	TRANSISTOR
Q406	2SA1175FE	001 030 5075 5	TRANSISTOR
Q407, Q408	2SC2785F	001 030 5076 4	TRANSISTOR
Q409	2SA1175FE	001 030 5075 5	TRANSISTOR
Q411, Q412	2SC2785F	001 030 5076 4	TRANSISTOR
Q505	2SC2785F	001 030 5076 4	TRANSISTOR
Q506, Q507	2SK301	001 030 2428 2	TRANSISTOR
Q508	2SA1175FE	001 030 5075 5	TRANSISTOR
Q509	DTC114YSTP	001 030 5646 2	TRANSISTOR
Q701	2SA684-RNC	001 030 0352 3	TRANSISTOR
Q801	DTA114ESTP	001 030 5275 9	TRANSISTOR
Q802	DTC114ESTP	001 030 5025 5	TRANSISTOR
Q803	2SC2785F	001 030 5076 4	TRANSISTOR
Q804	DTC114YSTP	001 030 5646 2	TRANSISTOR
Q805	2SC2785F	001 030 5076 4	TRANSISTOR
Q806	DTC114ESTP	001 030 5025 5	TRANSISTOR
Q807	DTA114ESTP	001 030 5275 9	TRANSISTOR
Q809	DTC114YSTP	001 030 5646 2	TRANSISTOR
Q810, Q811	2SA1175FE	001 030 5075 5	TRANSISTOR
DIODES			
D201	MA325G-Y	001 032 7205 5	ZENER
D202	MA165	001 032 0494 0	DIODE
D203	MA325G-Y	001 032 7205 5	ZENER
D204	KV1260Z	001 032 7237 7	DIODE
D205, D206	MA165	001 032 0494 0	DIODE
D207, D208	MA165	001 032 0494 0	DIODE
D209, D210	MA165	001 032 0494 0	DIODE
D211	MA4062-M	001 032 7211 7	DIODE
D212, D213	MA165	001 032 0494 0	DIODE
D214, D215	MA165	001 032 0494 0	DIODE
D216	MA29WA	001 032 7250 0	DIODE
D217	MA165	001 032 0494 0	DIODE
D218	MA4062-M	001 032 7211 7	DIODE
D219	SVGLB74UR3HL	001 032 7553 8	L.E.D
D401, D402	MA165	001 032 0494 0	DIODE
D403	MA4082M	001 032 4955 6	DIODE
D405, D406	MA165	001 032 0494 0	DIODE
D503, D505	MA165	001 032 0494 0	DIODE
D506	MA165	001 032 0494 0	DIODE
D701, D702	GP15GLF	001 032 8222 0	DIODE
D703, D704	GP15GLF	001 032 8222 0	DIODE
D705, D706 ⚠	SVD1SR35200A	001 032 3951 4	RECTIFIER
D707, D708 ⚠	SVD1SR35200A	001 032 3951 4	RECTIFIER
D709	MA4120	001 032 7292 0	DIODE
D710	MA165	001 032 0494 0	DIODE
D801	MA4051-M	001 032 4947 6	DIODE
D802	MA4056-M	001 032 7209 1	DIODE
D803, D804	MA165	001 032 0494 0	DIODE
D805	MA165	001 032 0494 0	DIODE
D806, D807	LN88RCPP	001 032 5530 3	LED
D808, D809	LN88RCPP	001 032 5530 3	LED
D810, D811	LN88RCPP	001 032 5530 3	LED
D812	LN88RCPP	001 032 5530 3	LED
D813, D814	MA165	001 032 0494 0	DIODE
D815, D816	LN88RCPP	001 032 5530 3	LED
D817, D818	LN88RCPP	001 032 5530 3	LED
D819	MA4030M	001 032 5807 3	DIODE
D820	MA4062-M	001 032 7211 7	DIODE
D822	MA165	001 032 0494 0	DIODE
D823 ⚠	SVD1SR35200A	001 032 3951 4	RECTIFIER
VARIABLE RESISTORS			
VR201	EVND4AA00B53	001 180 2319 9	V.R., 5KΩ(B)
VR301, VR302	EVND4AA00B24	001 180 2244 1	VARIABLE RESISTOR
VR303, VR304	EVND4AA00B24	001 180 2244 1	VARIABLE RESISTOR
VR305, VR306	EVND4AA00B54	001 180 2246 9	V.R.
VR307, VR308	EVND4AA00B25	001 180 2245 0	VARIABLE RESISTOR
VR401	EVND4AA00B53	001 180 2319 9	V.R., 5KΩ(B)
VR501, VR502	EWC2XAF25C15	001 174 9046 3	VARIABLE RESISTOR
VARIABLE CAPACITORS			
CT201	ECRHA007A41	001 141 0554 7	TRIMMER
CT202	ECRHA010A41	001 142 0565 9	TRIMMER
CT203	ECRHA020D41	001 142 0598 0	POLYETHYLENE CAPACITOR
COILS AND TRANSFORMERS			
L202, L203	ELEPK1R0MA	001 211 0854 9	COIL
L206	ELEPK1R2MA	001 211 0621 4	CHOKE COIL
L208	SLA2B3-P	001 211 2249 6	ANTENNA COIL
L209	SLA1B7R-P	001 211 2779 5	ANTENNA COIL
L210	SL02B9R-P	001 211 2783 9	OSCILLATOR COIL
L211	SL01B5-P	001 211 2782 0	OSCILLATOR COIL
L301, L302	QLB40048	001 210 7275 9	COIL
L303, L304	SLQU272-1Y-C	001 211 3679 4	CHOKE COIL
L305, L306	SLM1C77-K	001 211 0881 6	MPX COIL
L401	SL09C9-K	001 211 0882 5	OSCILLATOR COIL
L801, L803	ELEPK181KA	001 211 1076 3	CHOCK COIL
T1 ⚠ EK, XL	SLTF5M8-W	001 202 9039 7	POWER TRANSFORMER
T1 ⚠ EH, EB, EF, E	SLTF5M9-W	001 202 9040 4	POWER TRANSFORMER
T201	SLI4B108-Z	001 215 1975 7	I.F.TRANSFOMER
T202	SLI2B101-M	001 211 0654 5	I.F.TRANSFORMER
T203	SLI4B511-Z	001 211 0655 4	I.F. TRANSFORMER
T204	SLI4B513-Z	001 211 0656 3	I.F. TRANSFORMER
COMPONENT COMBINATIONS			
Z401, Z801	EXBF5E103J	001 230 1748 9	CNMBINATION COM
Z802	EXBF8E681J	001 230 2898 2	CNMBINATION COM
Z803	EXBF8E103J	001 230 1753 2	CNMBINATION COM
Z804	GP1U509M	001 033 0238 9	DIODE , REMOTE SENSOR
FILTERS			
CF201	SVFE107MS2-A	001 241 0777 7	CERAMIC FILTER
CF202	SVFSFZ450F7L	001 241 0429 4	CERAMIC FILTER
OSCILLATORS			
X201	SVQ43U452-2	001 250 2002 8	OSCLLATOR
X801	SVFCSA400MG	001 241 1076 5	CERAMIC FILTER
DISPLAYS			
CD201	SALHLC9225-6	001 080 0292 8	DISPLAY
LAMPS			
PL201	XAMR78S250	002 351 0397 4	LAMP
FUSES			
F1 ⚠ EK	XBA2C04TB0	002 380 1459 0	CURRENT FUSE
F1 ⚠ EH, EB, EF, E	XBA2C05TB0	002 380 1350 2	FUSE, T0.5A 250V
XL			
F2 ⚠	XBA2C12TB0	002 380 1310 0	FUSE
SWITCHES			
S201, S202	EVQQS205K	003 439 1236 3	SW
S203, S204	EVQQS205K	003 439 1236 3	SW
S205, S206	EVQQS205K	003 439 1236 3	SW
S207, S209	EVQQS205K	003 439 1236 3	SW
S210, S211	EVQQS205K	003 439 1236 3	SW
S212, S213	EVQQS205K	003 439 1236 3	SW
S214, S215	EVQQS205K	003 439 1236 3	SW
S216	EVQQS205K	003 439 1236 3	SW
S379, 380	SSP82-1	003 434 1015 9	LEAF SWITCH
S381	SMQT1451	003 434 0905 8	LEAF SWITCH
S382, S383	SMQT1615	003 434 0993 2	LEAF SWITCH
S384, S385	SMQT1466	003 434 0907 6	LEAF SWITCH
S401	SSH1220	003 435 6008 3	SWITCH
S402	SSS150	003 431 3104 6	SWITCH
S701	SSH1071	003 435 3185 9	SWITCH
S801, S802	EVQQS205K	003 439 1236 3	SW
S803, S804	EVQQS205K	003 439 1236 3	SW
S805, S806	EVQQS205K	003 439 1236 3	SW
S807, S808	EVQQS205K	003 439 1236 3	SW
S809	EVQQS205K	003 439 1236 3	SW
BATTERY			
BAT1	BR2325-1VC	016 956 0004 6	SECONDARY BATTERY
CASSETTE DECK			
104	SJH94	001 270 0774 7	E HEAD (DECK A)
105, 105	SJH92	001 270 1308 5	R/P HEAD
106	SMQT1469	016 726 0432 2	SPRING
107	RFS447Z	015 726 2437 7	SPRING
108	SMQT1468	016 630 0239 2	HEAD BASE (DECK A)
109	SMQT1653	016 630 1747 3	SENSING PLATE
110	SMQT1560	016 630 1674 3	HEAD PANEL (DECK A)
111	SMQT1622	016 726 0767 2	SPRING
112	SMQT1643	016 913 0002 7	SUPPLY REEL ASS'Y
113	SMQT1639	016 726 0776 1	SPRING
114	RFR29ZA	015 740 0302 7	ROLLER
115	RFS531ZA	015 726 2470 6	SPRING
116	SMQT1637	016 765 0054 9	TAKE UP REEL ASS'Y
117	SMQT1621	016 726 0766 3	SPRING
118	SMQT1605	016 718 3302 5	REC LEVER (DECK A)
119	RFG61ZA	015 745 0849 2	GEAR
120	SMQT1658	016 630 1745 5	PLATE
121	RFS450Z	015 726 2440 2	SPRING
122	RFS467Z	015 727 0783 5	PACK SPRING
123	SMQT1564	016 630 1678 9	REEL BASE ASS'Y
124	SMQT1620	016 745 0182 4	FF GEAR
125	RFY549ZA	015 718 3506 3	LEVER
126	RFS453Z	015 726 2442 0	SPRING
127	SMQT1569	016 718 3278 8	LEVER
128	RFS454Z	015 726 2443 9	COIL SPRING
129	SMQT1724	016 718 3411 1	LEVER
130	RFY585ZA	015 718 4091 1	LEVER
131	MM16N2LNC	002 310 2108 8	DC MOTOR
132	SMQT1619	016 741 0073 8	PULLEY
133	SMQT1723	016 754 0080 8	ANGULAR BELT
134	RFI27Z	015 653 0531 2	MOTOR RUBBER
135	SMQT1722	016 650 5416 1	BTACKET
136	SMQT1579	016 655 0614 2	FELT
137	RFY582Z	015 718 4089 5	LEVER
138	RFF39Z	015 756 0406 4	WHEEL (DECK B)
138	RFF40ZA	015 756 0407 3	WHEEL
139	SMQT1563	016 752 0118 1	RF BELT
140	SMQT1601	016 641 0239 1	METAL GUIDE
141	SMQT1557	016 630 1675 2	SUB CHASSIS
142	RFS530ZA	015 726 2469 9	COIL SPRING
143	SMQT1465	016 726 0434 0	SPRING (DECK A)
144	RFS532ZA	015 728 1316 9	SPRING
145	SMQT1727	016 747 0026 5	CLUTCH
146	SMQT1555	016 718 3270 6	REW LEVER
147	RFS466Z	015 726 2449 3	SPRING
148	SMQT1548	016 630 1676 1	PUSH BUTTON ACTUATOR
150	RFY541Z	016 630 1761 5	ANGLE
151	SMQT1463	016 643 0597 2	STOPPER
152	RFS459Z	015 726 2444 8	SPRING
153	SMQT1556	016 718 3269 9	LEVER
154	SMQT1554	016 718 3271 5	PAUSE BUTTON LEVER
155	SMQT1553	016 718 3272 4	STOP BUTTON LEVER
156	SMQT1552	016 718 3273 3	FF BUTTON LEVER
157	SMQT1551	016 718 3274 2	REW BUTTON LEVER
158	SMQT1550	016 718 3275 1	PLAY BUTTON LEVER
159	SMQT1580	016 718 3279 7	LEVER, REC (DECK A)
160	SMQT1618	016 630 1708 0	ANGLE
161	RFS462Z	015 728 1267 1	SPRING
162	SMQT1558	016 726 0727 0	SPRING
166	SMQT1675	016 630 1844 3	PLATE
167	SMQT1568	016 650 5145 5	ANGLE
168	SMQT1628	016 643 0940 7	P.R STOPPER
169	SMQT1641	016 643 0939 0	COLLER
171	RFS567Z	015 728 1424 6	SPRING
172	SMQT1725	016 650 5419 8	BRACKET
173	SMQT1726	016 718 3412 0	LEVER
174	SMQT1729	016 713 0437 8	SCREW
175	SMQT1730	016 653 1218 6	RUBBER SPACER
176	XWA2	005 513 4400 6	WASHER
N51	XTN2+4H	005 501 2158 1	SCREW
N52	XYN2D8	005 503 0922 7	SCREW
N53	XYN2DB7	005 503 0920 9	SCREW
N54	XYN2D7	005 501 0921 8	SCREW
N55	RFN142Z	005 513 3262 2	WASHER
N56	XYN2+C5	005 500 1291 6	SCREW
N57	XTN2+5H	005 501 2162 5	SCREW
N58	XTN2+3H	005 501 4724 5	SCREW
N59	RFN149Z	005 513 3269 5	WASHER
N59	SMQT1537	005 500 5082 7	SCREW
N60	XTB2+5G	005 501 2615 7	SCREW
N61	RFE239Z	005 500 5057 8	SCREW
N62	SMQ4918	016 643 0446 6	SCREW
N63	SMQT1617	016 643 0918 5	COLOR
N64	SMQT1624	005 500 5729 1	SCREW
N65	RFN123Z	005 513 3685 3	WASHER
N67	XTN2+6G	005 501 1622 2	SCREW
N68	XTN2+6H	005 501 3459 7	SCREW
N69	RFE98ZA	005 500 4387 7	SCREW
N70	RFN153ZA	005 513 3274 8	WASHER

■ MECHA

Description
FUSE
SW
SW
SW
SW
SW
SW
SW
SW
LEAF SWITCH
LEAF SWITCH
LEAF SWITCH
LEAF SWITCH
SWITCH
SWITCH
SWITCH
SW
SW
SW
SW
SW
SECONDARY BATTERY

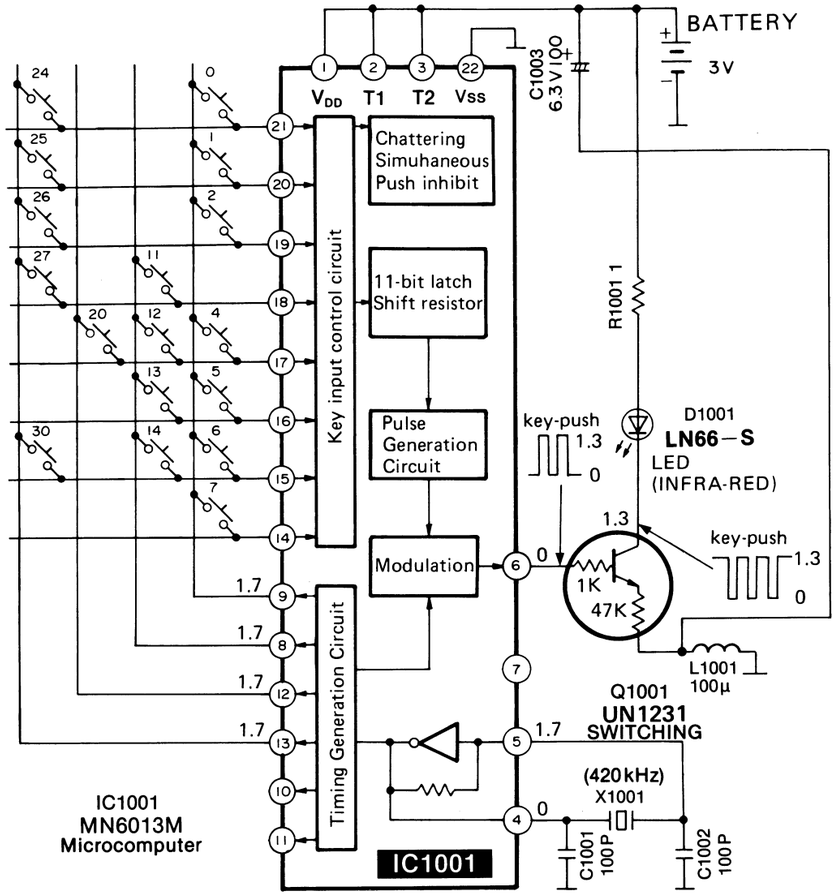
Description
SPRING
PUSH BUTTON ACTUATOR
ANGLE
STOPPER
SPRING
LEVER
PAUSE BUTTON LEVER
STOP BUTTON LEVER
FF BUTTON LEVER
REW BUTTON LEVER
PLAY BUTTON LEVER
LEVER, REC (DECK A)
ANGLE
SPRING
SPRING
PLATE
ANGLE
P.R STOPPER
COLLER
SPRING
BRACKET
LEVER
SCREW
RUBBER SPACER
WASHER
SCREW
SCREW
SCREW
SCREW
WASHER
SCREW
SCREW
SCREW
WASHER
SCREW
SCREW
SCREW
SCREW
COLOR
SCREW
WASHER
SCREW
SCREW
SCREW
WASHER

■ MECHANICAL PARTS LOCATION



| | | |

■ SCHEMATIC DIAGRAM OF REMOTE-CONTROL TRANSMITTER



Key No.	Function	Key No.	Function
0	AUDIO MUTING (−20dB)	13	CH7 (CH15)
1	VOLUME DOWN ▼	14	CH8 (CH16)
2	VOLUME UP ▲	20	PHONO
4	CH1 (CH9)	24	CD PLAY ▶/❚❚ PAUSE
5	CH2 (CH10)	25	CD STOP ■
6	CH3 (CH11)	26	CD SKIP/SEARCH ⏮
7	CH4 (CH12)	27	CD SKIP/SEARCH ⏭
11	CH5 (CH13)	30	TAPE
12	CH6 (CH14)		

■ SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time switch the development of new technology)

Note 1:

- **S201～S203:** Band selector
  S201: FM, **S202**: MW, **S203**: LW
- **S204** : Memory switch
- **S205** : FM mode selector
- **S206, 207** : Tuning switch
  S206: up, **S207**: down
- **S209～216** : 16ch preset tuning switch
  [**S209**: 8/16ch, **S210**: 7/15ch
  S211: 6/14ch, **S212**: 5/13ch
  S213: 4/12ch, **S214**: 3/11ch
  S215: 2/10ch, **S216**: 1/9ch]
- **S379** : DECK A ATS switch
- **S380** : DECK B ATS switch
- **S381** : DECK A Rec switch
- **S382** : DECK A Muting switch
- **S383** : DECK B Muting switch
- **S384** : DECK A Motor switch
- **S385** : DECK B Motor switch
- **S401** : Dolby NR switch
- **S402** : Beat proof switch in "A" position
- **S701** : Power switch
- **S801～804** : Input selector switch
  S801: Phono, **S802**: Tuner
  S803: CD, **S804**: Tape
- **S805, 806** : Volume control switch
  S805: up, **S806**: down
- **S807, 808** : Balance control switch
  S807: light, **S808**: right
- **S809** : Muting switch

- Signal line
  : FM signal
  : LW/MW signal
  : AF signal (Lch)
  : Tape Record signal
  : Positive and negative voltage line
  : FM OSC
  : LW/MW OSC
  : Tape playback signal
- Important safety notice:
  Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts. Indicated voltage values are standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on internal impedance of the DC circuit tester.
- All voltage values shown in circuitry are DC voltage in FM signal (Monaural signal) reception mode.
  Figures in ( ) Stand for DC-voltage in MW signal reception mode
  Figures in [ ] Stand for DC-voltage in LW signal reception mode
  Figures in (( )) Stand for DC-voltage in playback signal reception mode
  Figures in 《 》 Stand for DC-voltage in REC signal reception mode

* **Caution !**

IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.
* Cover the parts boxes made of plastics with alminum foil.
* Ground the soldering iron.
* Put a conductive mat on the work table.
* Do not touch the legs of IC or LSI with the fingers directly.

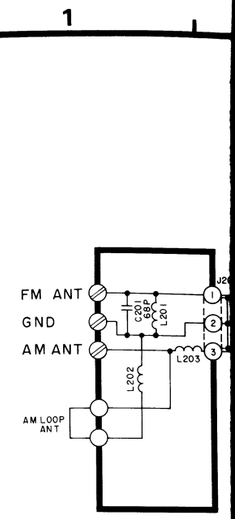
Note 2:

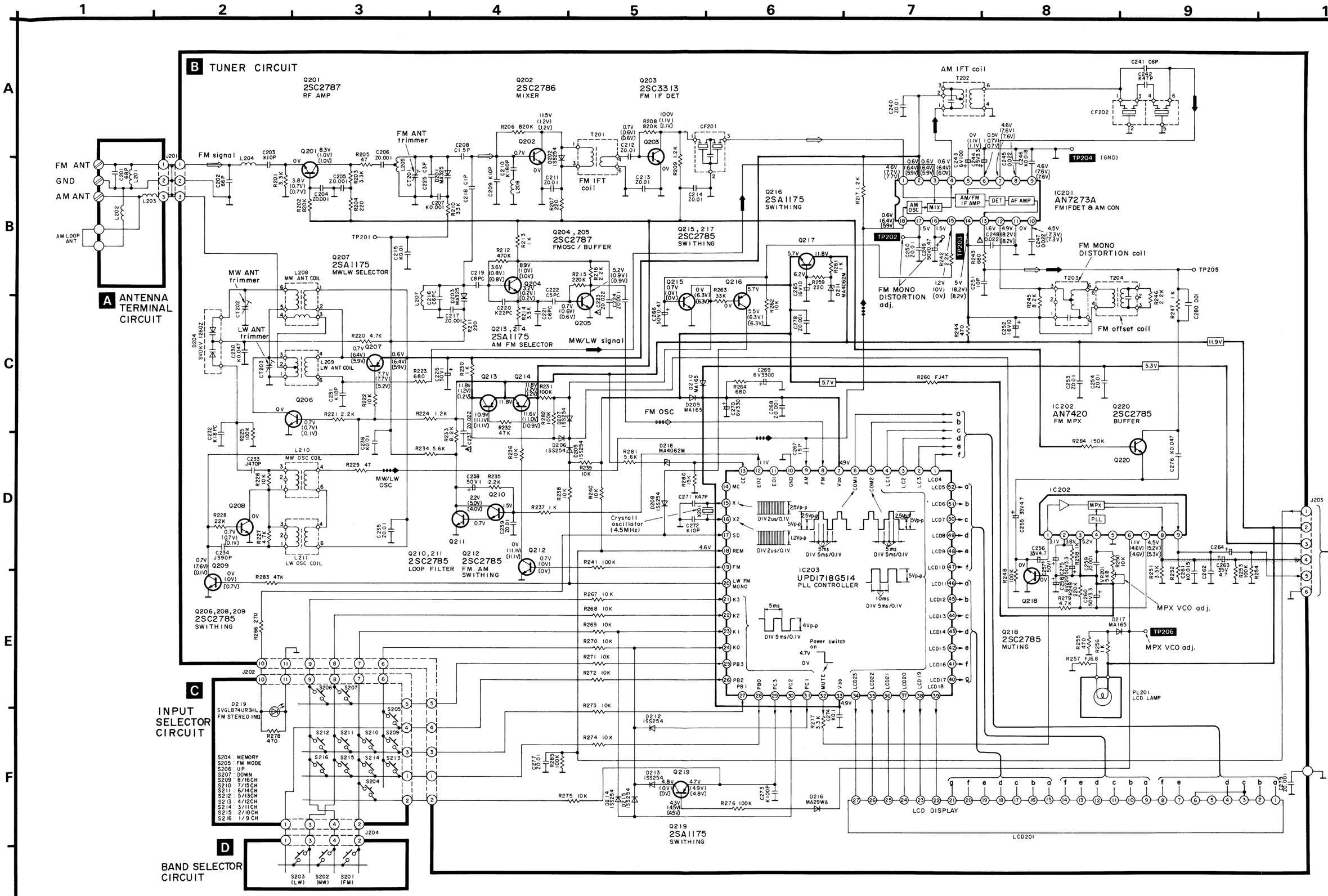
CAUTION:
This lithium battery is a critical component (Type No. BR2325-1 VC. Mfrd by Matsushita Battery Industrial Co., Ltd.). Please observe for the proper polarity and the exact location when replacing it and soldering the replacement lithium battery in.

LITIUM PARISTO!
Pariston saa vaihtaa ainoastaan saman valmistajan saman tyyppiseen paristoon.
Pariston virheellisestä käsittelystä syntyy rajähdysvaara.

VARNING:
Detta litiumbatteri (av typ Nr. BR2325-1VC, tillverkad av Matsushita Battery Industrial Co., Ltd.) är en kritisk komponent. Var säker om att iaktta korrekt polaritet och exakt läge av litiumbatteriet under ersättning och lödning av ersättningsbatteriet.

ADVARSEL:
Lithiumbatteriet er en vigtig komponent (type nr BR2325-1VC. Fremstillet af Matsushita Battery Industrial Co., Ltd.).
Husk rigtig polaritet og placering ved udskiftning og når De lodder det nye lithiumbatteri fast.




B TUNER CIRCUIT
A ANTENNA TERMINAL CIRCUIT
C INPUT SELECTOR CIRCUIT
D BAND SELECTOR CIRCUIT
FM ANT
GND
AM ANT
AM LOOP ANT
Q201 2SC2787 RF AMP
Q202 2SC2786 MIXER
Q203 2SC3313 FM IF DET
FM signal
FM ANT trimmer
FM IFT coil
Q204, 205 2SC2787 FMOSC / BUFFER
Q207 2SA1175 MWLW SELECTOR
MW ANT trimmer
LW ANT trimmer
MW ANT COIL
LW ANT COIL
MW OSC COIL
LW OSC COIL
Q213, 214 2SA1175 AM FM SELECTOR
MW/LW signal
Q206 Q208 Q209 2SC2785 SWITHING
MW/LW OSC
Q210, 211 2SC2785 LOOP FILTER
Q212 2SC2785 FM AM SWITHING
Q211
Q215, 217 2SC2785 SWITHING
Q216 2SA1175 SWITHING
FM MONO DISTORTION adj.
FM MONO DISTORTION coil
FM offset coil
AM IFT coil
IC201 AN7273A FMIFDET & AM CON
AM/FM IF AMP
DET
AF AMP
AM OSC
MIX
FM OSC
IC202 AN7420 FM MPX
Q220 2SC2785 BUFFER
MPX
PLL
MPX VCO adj.
Q218 2SC2785 MUTING
PL201 LCD LAMP
IC203 UPD1718G514 PLL CONTROLLER
Crystall oscillator (4.5MHz)
Power switch on
Q219 2SA1175 SWITHING
LCD DISPLAY
LCD201
Q206,208,209 2SC2785 SWITHING
S204 : MEMORY
S205 : FM MODE
S206 : UP
S207 : DOWN
S209 : 8/16CH
S210 : 7/15CH
S211 : 6/14CH
S212 : 5/13CH
S213 : 4/12CH
S214 : 3/11CH
S215 : 2/10CH
S216 : 1/9CH
D219 SVGL874UR3HL FM STEREO IND.
TP204 (GND)
TP205
TP206
TP201
TP202
TP203
11.9V
5.3V
5.7V
4.9V
4.6V

E MAIN CIRCUIT

IC301 AN6558F DECK B PLAY BACK AMP
Q301,302 2SC2785 PLAY MUTE
Q303,304 2SC2785 ATS CONTROL
IC306 AN6552F REC/PLAY AMP
IC303 MN6634 PLAY BACK/REC SELECT
IC304 MN6634 PLAYBACK/REC SELECT
IC302 AN6558F DECK A PLAY BACK AMP
IC305 AN6552F REC AMP
Q305,306 2SDI330 PLAY MUTE
Q307,308 2SC2785 ATS CONTROL
Q309,310 2SC2785 REC MUTE
Q318,319 2SC2785
Q315~317 2SCI845 HAED SELECTOR
Q403,404 2SD592A BIAS OSC
Q405 2SD592A REC DET.
Q401,402 2SDI512 WDS SELECT
Q406 2SAI175EF HEAD SELECTOR
Q407 2SC2785EF PLAYBACK/REC SELECTOR
Q408 2SC2785EF P/R SELECTOR
Q409 2SA1175 REC/PLAY SELECT
Q311,312 2SC2785 TAPE SELECT (Cro2)
Q412 2SC2785 DOLBY SELECT
Q411 2SC2785 SWITCHING

(DECK B) PLAYBACK HEAD L ch R ch — J301
(DECK A) R/P HEAD L ch R ch — J302
(DECK A) ERASE HEAD — J303
P.B. signal
REC signal
REC BIAS/CURRENT adj.
REC BIAS adj.(Lch)
REC BIAS adj.(Rch)
REC BIAS /CURRENT adj.
DECK B P.B.GAIN adj.(Lch)
DECK B P.B.GAIN adj.(Rch)
DECK A P.B.GAIN adj.(Lch)
DECK A P.B.GAIN adj.(Rch)
REC CURRENT adj.(Lch)
REC CURRENT adj.(Rch)
ERASE CURRENT adj.
ERASE CURRENT adj.
P.B. GAIN adj.
TP301 (Lch) TP302 (Rch) TP303 (Lch) TP304 (Rch) TP305 (Lch) TP306 (Rch) TP307 (GND) TP401 TP402 (GND)
S402 (BEAT PROOF)
S381 (REC) S382 (MUTING) S379 (ATS) S384 (MOTOR) S385 (MOTOR) S383 (MUTING) S380 (ATS)
M MOTOR
J401 J402

(DECK A) (DECK B)

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F DOLBY NR CIRCUIT

IC61 TA7770N DOLBY NR
BIAS & SWITCH
R CH

J DOLBY SELECTOR CIRCUIT

(DOLBY NR) S401 ON OFF

IC501 AN6532F EQUALI
IC503 TC9177P ATTENUATOR
IC504 AN6552F BUFFER
IC505 AN6552F BUFFER

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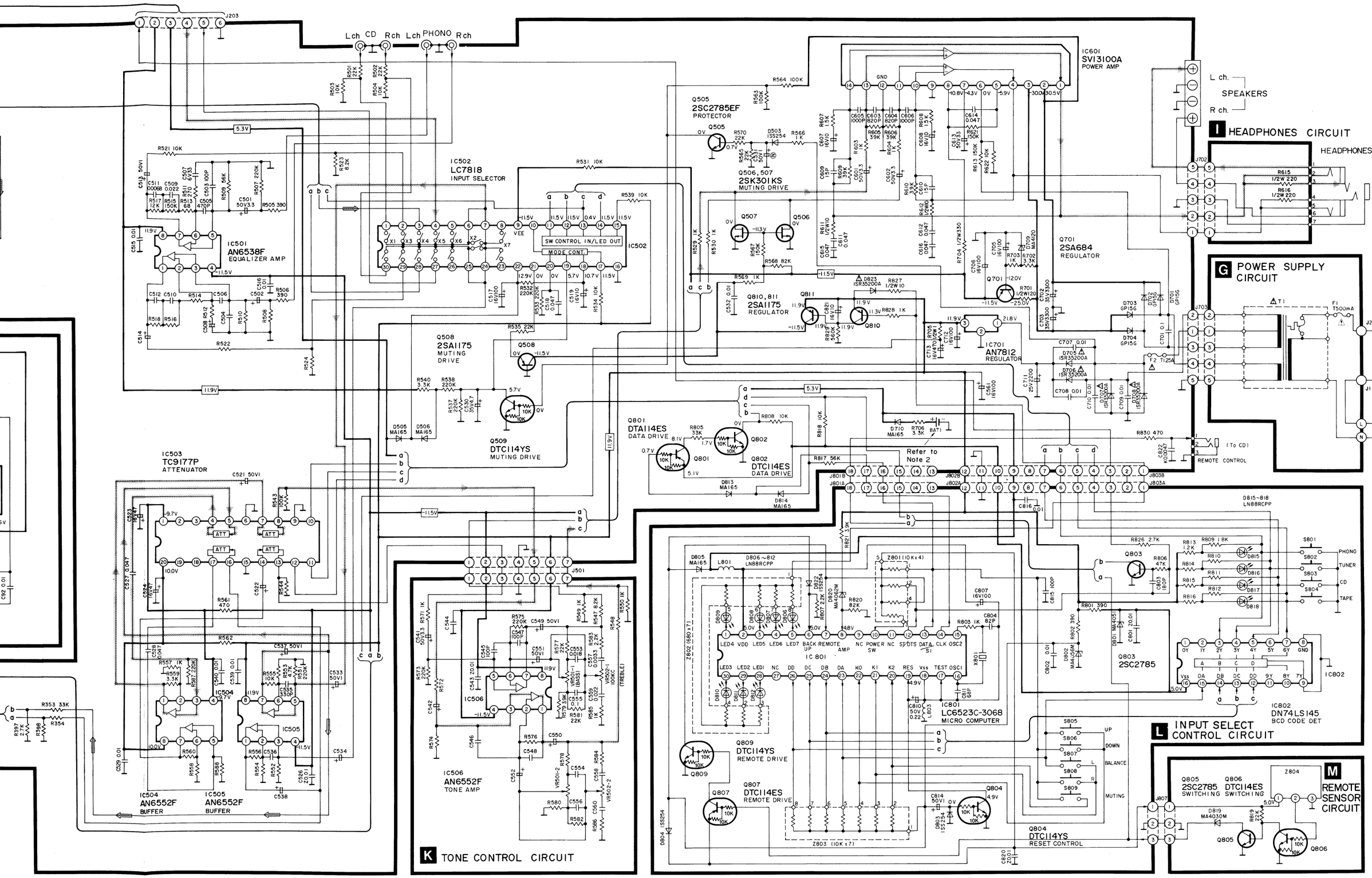

J203
Lch CD Rch Lch PHONO Rch
IC502
LC7818
INPUT SELECTOR
IC501
AN6538F
EQUALIZER AMP
IC503
TC9177P
ATTENUATOR
IC504
AN6552F
BUFFER
IC505
AN6552F
BUFFER
Q508
2SA1175
MUTING DRIVE
Q509
DTC114YS
MUTING DRIVE
Q505
2SC2785EF
PROTECTOR
Q506, 507
2SK301KS
MUTING DRIVE
Q810, 811
2SA1175
REGULATOR
IC601
SV13100A
POWER AMP
Q701
2SA684
REGULATOR
IC701
AN7812
REGULATOR
Q801
DTA114ES
DATA DRIVE
Q802
DTC114ES
DATA DRIVE
Refer to Note 2
L ch.
SPEAKERS
R ch.
I HEADPHONES CIRCUIT
HEADPHONES
G POWER SUPPLY CIRCUIT
POWER SW CIRCUIT
REMOTE CONTROL
AC 220V (50/60Hz)
IC506
AN6552F
TONE AMP
K TONE CONTROL CIRCUIT
IC801
LC6523C-3068
MICRO COMPUTER
Q809
DTC114YS
REMOTE DRIVE
Q807
DTC114ES
REMOTE DRIVE
Q804
DTC114YS
RESET CONTROL
Q805
2SC2785
SWITCHING
Q806
DTC114ES
SWITCHING
M REMOTE SENSOR CIRCUIT
L INPUT SELECT CONTROL CIRCUIT
IC802
DN74LS145
BCD CODE DET
Q803
2SC2785
PHONO
TUNER
CD
TAPE
UP
DOWN
BALANCE
MUTING

■ REPLACEMENT PARTS LIST

Notes: * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

* Bracketed indications in Ref. No. columns specify the area.
Parts without these indications can be used for all areas.

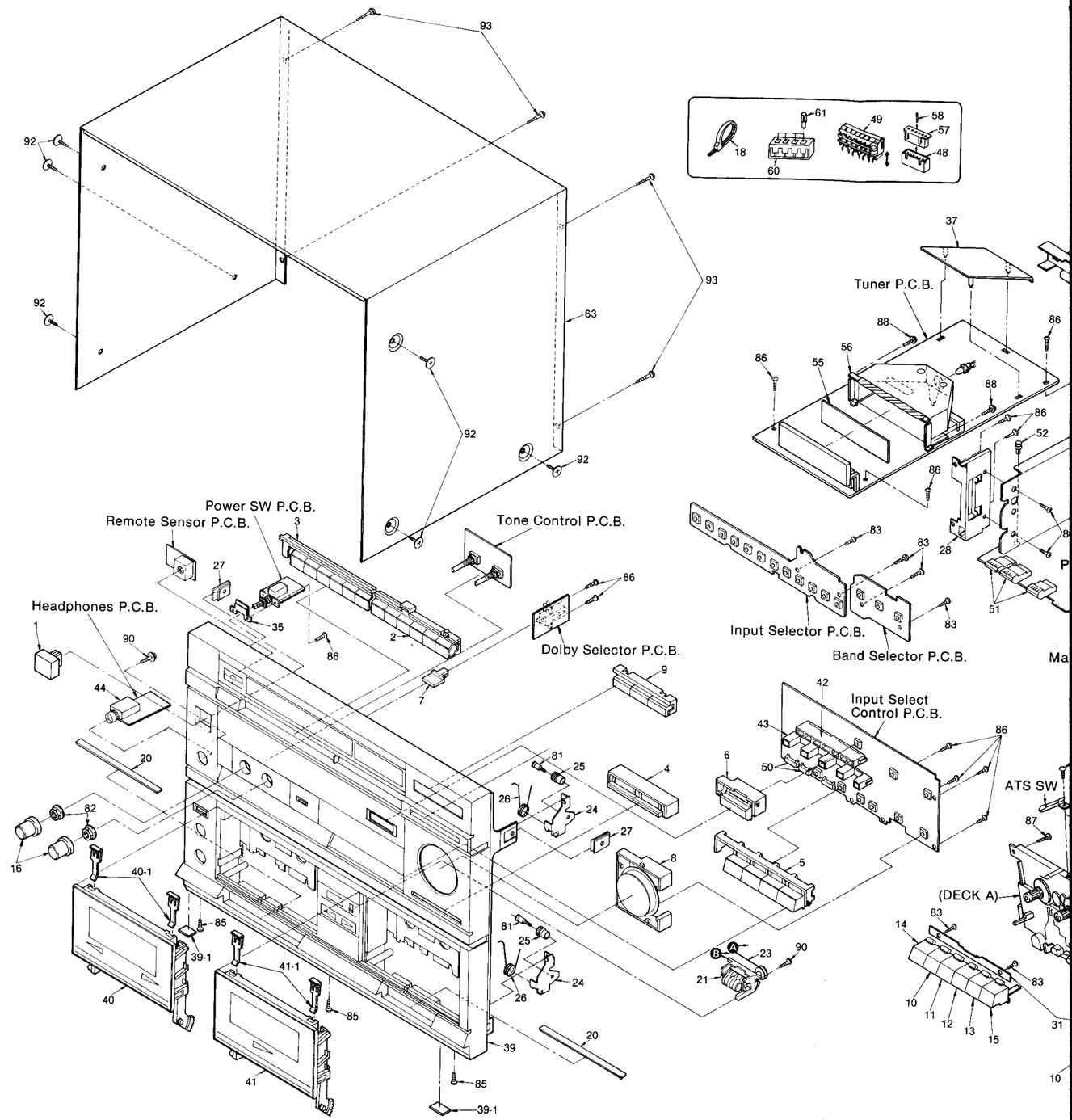
Ref. No.		Part No.	Part Code	Description
CABINET AND CHASSIS				
1		SBC666-1	016 702 6076 0	BUTTON
2		SBC874-1D	016 702 7074 8	BUTTON
3		SBC874-2A	016 702 7075 7	BUTTON
4		SBC897	016 702 7014 0	BUTTON
5		SBC925-1A	016 702 6999 6	BUTTON
6		SBC927	016 702 7017 7	BUTTON
7		SBC928	016 702 6969 2	KNOB
8		SBC929	016 702 6998 7	BUTTON
9		SBC930F	016 702 7066 8	BUTTON
10		SBCAX800-KN6	016 702 7058 8	BUTTON
11		SBCAX800-KN7	016-702 7059 7	BUTTON
12		SBCAX800-KN8	016 702 7061 3	BUTTON
13		SBCAX800-KN9	016 702 7063 1	BUTTON
14		SBCAX800L-KE	016 702 7096 2	BUTTON
15		SBCAX800LKE1	016 702 7095 3	BUTTON
16		SBN1221	016 700 1974 5	KNOB
17		SGPF5A	016 840 7811 8	REAR PANEL
EK				
17		SGPF5B	016 840 7808 3	REAR PANEL
E				
17		SGPF5C	016 840 7809 2	REAR PANEL
XL				
17		SGPF5D	016 840 7810 9	REAR PANEL
EH, EB, EF				
18		SHR301	016 645 0044 0	CLAMPER
19		SHR127	016 645 0037 9	SPACER, POWER CORD
EH, EB, EF, E.				
XL				
19		SHR129	016 645 0038 8	BUSHING, AC CORD
EK				
20		SHGF4	016 653 1100 9	RUBBER SPACER
21		SJNF1	016 892 0130 4	TAPE COUNTER
22		SKUAX800L-KE	016 802 2196 2	BOTTOM BOARD
22-1		SKL293	016 828 0269 8	RUBBER
23		SMQ20021	016 754 0064 8	ANGULAR BELT
24		SMQ30030	016 650 5149 1	ANGLE
25		SMQ4096	016 745 0063 0	GEAR
26		SMQ60026	016 726 0969 4	SPRING
27		SNE4064	016 846 3442 9	U NUT(BRACKET)
28		SUW3063	016 650 5357 5	ANGLE
29		SUW3070	016 650 5359 3	ANGLE
30		SUW3007	016 650 5211 2	ANGLE
31		SUW2995	016 650 5182 0	BRACKET
32		SUWF15	016 650 5403 6	BRACKET
33		SUWF16	016 650 5406 3	BRACKET
34		SUWF17-2	016 650 5404 5	BRACKET
35		SUWF18	016 650 5405 4	BRACKET
36		SMCF8	016 601 0643 7	SHIELD COVER
37		SMCF7	016 601 0644 6	SHIELD COVER
38	⚠	QFC1205M	003 490 0928 5	POWER CORD
EK				
38	⚠	SJAG23	003 490 1056 4	POWER CORD
XL				
38	⚠	SJA138-3	003 490 2575 2	POWER CORD
EH, EB, EF, E				

Ref. No.	Part No.	Part Code	Description
39	SGYAX800L-KE	016 840 7812 7	FRONT PANEL (K)
39-1	SKL293	016 828 0269 8	RUBBER
40	SYEF3	016 652 0851 6	CASSETTE HOLDER
40-1	QBP2006A	015 727 0706 8	SPRING
41	SYEF4	016 652 0852 5	CASSETTE HOLDER
41-1	QBP2006A	015 727 0706 8	SPRING
42	LN078396P	001 033 0156 0	DIODE, GAASP
43	LN048393P	001 033 0155 1	LED ASS'Y
44	SJJ63E	003 400 4329 0	JACK, HEADPHONE
45	SJJ130-2	003 400 7317 2	JACK
46	SJF4442	003 410 5983 6	TERMINAL BOARD
47	SJF8511N	003 410 8209 5	TERMINAL PLATE
48	SJT3213	003 410 6011 5	CONNECTOR
48	SJT3319	003 403 3892 7	CONNECTOR
48	SJT3611	003 410 6000 8	CONNECTOR
48	SJT3709	003 403 4232 3	CONNECTOR
48	SJT3809	003 410 6013 3	CONNECTOR
49	SJT30540LX-V	003 410 5996 1	CONNECTOR
49	SJT30640LX-V	003 410 6149 8	CONNECTOR
49	SJT31143-V	003 410 7732 5	LUG TERMINAL
50	SJT30647WL	003 410 8132 9	CONNECTOR
51	SJS50680WL	003 403 7235 8	CONNECTOR
52	SHR9094	016 640 0048 1	LATCH
53	SMC1077	016 601 0037 3	INSULATOR
54	SJT390	003 410 7350 5	FUSE HOLDER
55	SDU296A	016 842 1393 9	LCD FILTER
56	SMP409	016 632 1787 5	LAMP CASE
57	SJS5215	003 400 5923 4	CONNECTOR
57	SJS5331	003 400 5924 3	CONNECTOR
57	SJS5629	003 400 5917 2	CONNECTOR
57	SJS5811	003 400 5930 5	CONNECTOR
58	SJT783	003 410 6001 7	CONTACT
60	SJS5715	003 400 6034 4	SOCKET(7P)
60	SJS5717	003 400 6573 2	SOCKET
61	SJT785	003 410 6015 1	CONTACT
62	SJF4441-1	003 410 7297 3	TERMINAL BOARD
(XL)			
62	SJF4441-4	003 410 7298 2	TERMINAL BOARD
(EK, EH, EB)			
(EF, E)			
63	SKCAX800-KN	016 800 3074 7	CABINET ASS'Y
SCREWS, WASHERS & NUTS			
81	SNE2120	005 500 5609 8	SCREW
82	SNE4021	005 507 0372 5	NUT
83	XTS3+10J	005 501 2755 6	SCREW
84	XTB3+6F	005 501 2687 1	SCREW
85	XTB3+8J	005 501 1535 0	SCREW
86	XTB3+10J	005 501 2076 2	SCREW
87	XTB3+10GFR	005 501 3126 5	SCREW
88	XTWS3+10Q	005 501 2293 5	SCREW
89	XTW3+12TFZ	005 501 4794 1	SCREW
90	XTWS3+8T	005 501 3311 6	SCREW
91	XYA2+CF8	005 503 1272 4	SCREW
92	SNE2095-5	005 500 4884 5	CABINET
93	XTW3+12TFZ	005 501 4794 1	SCREW
94	XTB3+16J	005 501 2648 8	SCREW

Ref. No.	Part No.	Part Code	Description
PACKINGS			
P1	SPGF9	016 971 5064 7	PACKING CASE
P2	SPS4946-1	016 977 3291 6	PAD
P3	SPS4947-1	016 977 3292 5	PAD
P4	SPS4948	016 977 3282 7	PAD
P5	SPS4949-1	016 977 3293 4	PAD
P6	SPSF13	016 977 3326 2	PAD
P7	SPHF3	016 979 0392 4	PACKING SHEET
P8	XZB70X70C02	016 978 0534 3	PROTECTION COVER
ACCESSORIES			
A1	SSA269M	002 390 1558 2	FM ANTENNA
XL			
A1	SSA270M	002 390 1568 0	FM ANTENNA CORD

Ref. No.	Part No.	Part Code	Description
EK, EH, EB, EF, E			
A2	SQFF10	016 983 5200 1	INSTRUCTION BOOK
XL			
A2	SQFF11	016 983 5192 4	INSTRUCTION BOOK
EF			
A2	SQFF8	016 983 5193 3	INSTRUCTION BOOK
EK			
A2	SQFF9	016 983 5199 7	INSTRUCTION BOOK
EH, EB, E			
A3	SJP9009	003 492 5594 7	PLUG
EK			
A4	UM-3NE-2P	016 955 0025 6	PRIMARY BATTERY

■ CABINET PARTS LOCATION



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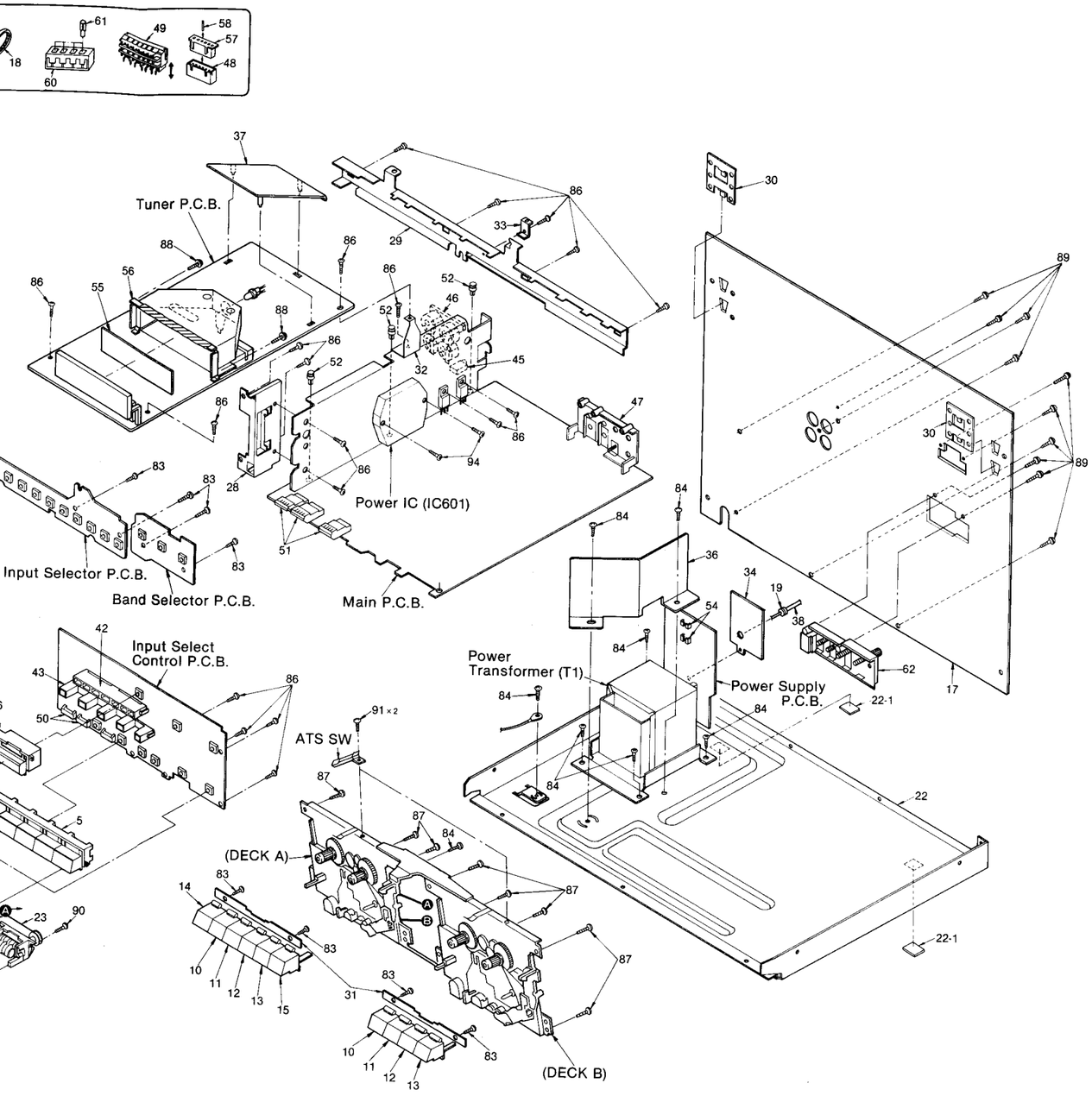
Tuner P.C.B.
Power IC (IC601)
Input Selector P.C.B.
Band Selector P.C.B.
Main P.C.B.
Input Select Control P.C.B.
Power Transformer (T1)
Power Supply P.C.B.
ATS SW
(DECK A)
(DECK B)

| | | |